AN ANALYTICAL STUDY OF MUSICAL TALENT, ACCOMPLISHMENT, BACKGROUND AND INTEREST OF THE SIXTH GRADE PUPILS OF THE EDMUND ASA WARE ELEMENTARY SCHOOL, ATLANTA, GEORGIA

A THESIS

SUBMITTED TO THE FACULTY OF THE SCHOOL OF EDUCATION, ATLANTA UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE DEGREE OF MASTER OF EDUCATION

BY

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ATLANTA UNIVERSITY

JUNE, 1954

ACKNOWLEDGEMENT

The writer is indebted to Dr. Lynette Seine Bickers and Dr. Oran W. Eagleson, adviser and co-adviser respectively, for their unfailing patience and helpful criticisms during the preparation of this thesis.

J.B.B.G.

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CHAPTER I

INTRODUCTION

Rationale.-- Human material constituting the only resource that is capable of being creatively developed by the processes of education makes it, therefore, the real media of all curricular composition. In the light of this belief, plotting a course designed to ease and expedite the teaching and learning of music should be regarded as a creative endeavor, wherein curriculum workers employ the artists' approach and method. It must be realized furthermore that the composer, in order to achieve his purposes, has to know not only how to use his material, but still more important, what can be done with what he has at hand.

In our case, what we have at hand happens to be all the children of all the people, differing as widely in musical aptitude and talents as in every other aspect of behavior. Generally speaking, what are they like musically? Are all children musical to a degree? If so, what are the needs, impulses, emotions and understandings which call forth and stimulate the use of music as another language.

Some years ago, the National Music Supervisors Conference adopted for its slogan, "Music for every child; every child for music." This slogan has given many teachers an excuse for promoting music indiscriminately without attempting to differentiate and adjust the types of music to the types of talent and interest possessed by children. Only by respecting the child's interest and needs may we promote the proper attitude toward music.

There has been relatively little research done on an elementary

school level of musical talent and accomplishment with the factors of background and interest considered. It is out of this concern and recognition of the problem confronting music educators that the writer is prompted to make this study.

Statement of the Problem.-- This study was to determine what implications for improved teaching of music could be derived when musical talent, accomplishment, background and interest of the sixth grade pupils of Edmund Asa Ware Elementary School, Atlanta, Georgia, were analyzed in terms of general status, comparisons and relationships.

Purpose of the Study.-- The purposes of this study were to answer the following questions:

1. What is the general level of musical talent among the sixth grade pupils?

2. What is the general level of musical accomplishment among the sixth grade pupils?

3. What is the general level of musical background and interest among the sixth grade pupils?

4. What is the difference, if any, between the performance of the girls and boys on the Seashore Measures of Musical Talent?

5. What is the difference, if any, between the performance of girls and boys on the Kwalwasser-Ruch Test of Musical Accomplishment?

6. What relationship is there between musical talent and musical accomplishment?

7. How do the musical test scores of those pupils with rich musical background and interest compare with the musical test scores of those with meager musical background and interest who scored above the median for each

test?

8. How do the musical test scores of those pupils with rich background and interest compare with a random sampling of those pupils with meager background and interest?

9. What implications for improved teaching of music can be derived from the data?

Definition of Terms.-- Because of confusion in terminology, major terms being used in this study were defined:

Musical Talent refers to the level of capacity as measured by the Measures of Musical Talent by Seashore.

Accomplishment refers to the level of achievement as measured by the Kwalwasser-Ruch Test of Musical Accomplishment.

Background refers to environmental conditions favorable to the development of musical talent.

Interest refers to an evidence of preference for music rather than other voluntary activities.

Method of Research.-- The Normative Survey Method of Research with the special techniques of testing and statistical treatment were used to gather and interpret the data needed for this study.

Subjects and Materials.-- The subjects involved in this study were the 110 sixth grade pupils enrolled at the Edmund Asa Ware Elementary School, Atlanta, Georgia, during the second semester, 1953-54.

The instruments used in collecting the data were:

1. The Kwalwasser-Ruch Test of Musical Accomplishment by Jacob Kwalwasser and G. M. Ruch.

2. The Measures of Musical Talent, Series A, by Carl E. Seashore

3. Musical Background and Interest Inventory constructed as a data-gathering instrument.

The Kwalwasser-Ruoh Test of Musical Accomplishment is designed to measure the achievement of pupils in typical public school music courses in the elementary and high school grades. The validity rests primarily upon the specifications adopted by the Music Supervisors' National Conference.[1] It has been further checked against a number of courses of study in city school systems which have received national recognition for their work in public school music. The following is a list of titles of the separate tests of the Kwalwasser-Ruch Test of Musical Accomplishment:

Test 1. Knowledge of Musical Symbols and Terms

Test 2. Recognition of Syllable Names

Test 3. Detection of Pitch Errors in a Familiar Melody

Test 4. Detection of Time Errors in a Familiar Melody

Test 5. Recognition of Pitch Names

Test 6. Knowledge of Time Signatures

Test 7. Knowledge of Key Signatures

Test 8. Knowledge of Note Values

Test 9. Knowledge of Rest Values

Test 10. Recognition of Familiar Melodies from Notation.

The Measures of Musical Talent consist of a battery of six phonograph records measuring sensitivity to Pitch, Loudness, Time, Rhythm, Timbre and Tonal Memory.

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[1] Bulletin No. 1, 1921, Music Supervisors' National Conference, containing a report on a standard course in music for grade schools, made at the Fourteenth Annual Meeting held in St. Joseph, Missouri, April 4 to 8, 1921.

The test material needed for administering the Seashore Measures of Musical Talent is contained on six double-disc Columbia records. The measures are so adjusted as to be easy enough in parts for the poorest listener and difficult enough in parts for the best listener.

The Musical Background and Interest Inventory consists of thirty-eight questions which this investigator thought would give information concerning the amount and types of music experienced by the sixth grade pupils outside of school. A number of questions were concerned with parental interest and participation in musical activities.

Pupils were considered to have a rich musical background and interest according to the following categories:

1. The pupils must have studied a musical instrument or voice for a period of at least one year.

2. One or both parents must either sing well or play a musical instrument.

3. The pupil must indicate some appreciation for what is considered better music.

Pupils were considered to have a meager background and interest who failed to measure up to the criteria considered for rich background and interest.

Procedure.-- This study proceeded in the following manner:

1. A survey was made of the literature related to this study.

2. The writer constructed an inventory for the sixth grade pupils to determine the amount of musical background and interest.

3. The Seashore Measures of Musical Talent were administered to the

pupils in one class[1] each morning beginning February 8, 1954, and ending February 11, 1954. The time was from 9:30 to approximately 11:30.

4. The Kwalwasser-Ruch Test of Musical Accomplishment was administered to the pupils in one class each afternoon from February 8, 1954, to February 11, 1954, beginning at 1:30 and ending at 2:30.

5. The Background and Interest Inventory was administered to the pupils in each class on Friday, February 12, 1954. One hour was given each class to complete the inventory.

6. Before each test and the inventory, directions were given and also a few introductory remarks were made by the investigator to motivate the subjects to put forth the greatest possible effort. Oral practice was conducted for the Measures of Musical Talent before any responses were recorded on the test blanks.

7. The responses on the inventory were analyzed and tabulated.

8. The test data collected were scored, analyzed and interpreted. Measures of central tendency, variability and significance were found.

9. The data were presented in tabular form.

10. Implications and recommendations were made.

Limitations of the Problem.-- Although it is felt that the conditions necessary for obtaining a high degree of objectiveness were met, it is important that certain limitations be recognized in order to keep the findings in their true perspective.

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[1] There are four sixth grade classes at Edmund Asa Ware School. The enrollment in each class is as follows:

1. 28 pupils
2. 27 pupils
3. 29 pupils
4. 26 pupils

1. All talent tests isolate and measure, for the most part, the separate elements of musicality or musical mindedness. The underlying idea in all of them is that once the elements are measured and evaluated, the sum of the scores will give a complete picture of the total musical ability, and these elements, in order to be measured at all, must be taken separately and without any relationship to each other. But musically in the broadest and most desirable connotation of this term, does consist of a relationship of these elements. Consequently, one cannot expect to obtain information which these tests do not give and for which they are not designed. Nevertheless, such tests are extremely valuable to those who wish to know the information which these tests purport to give.

2. Most music accomplishment tests, such as the Kwalwasser-Ruch Test of Musical Accomplishment, include specific musical selections and technical information not possible to identify because of the wide variety of music taught and used in the different school systems. It is thought by a number of music educators, that musical accomplishment tests are not, at their present stage, fully standardized.

3. It is highly probable that the instrument used for the study of background and interest of the subjects was not as valid as the writer desired.

4. Finally, the one hundred and ten sixth grade subjects were drawn from one school for the year 1953-54, and therefore, could not be representative of sixth grade pupils in other schools in the Atlanta system.

Related Literature on the Problem.-- A survey of the literature related to this study reveals a distinct lack of material pertaining to musical talent and accomplishment as related to background and interest.

The literature related to this study may be divided into the following categories:

1. Information concerning musical talent.
2. Information concerning musical accomplishment.
3. Sex differences and music.
4. Environment and heredity.

In considering the first category, musical talent, Gehrkens stated that:

> Musical talent used to be thought of as a certain kind of inborn ability which some people have and others do not have, according to their inheritance. But modern psychologists have shown that what is called musical talent is actually a combination of a number of abilities, and that these exist in various proportions in different individuals.[1]

Ricker found that the ability to judge pitch was confined to specially trained or talented individuals.[2]

After administering the Seashore Tests with forty Negro college students, Bean[3] concluded that the scores were poorer in Pitch, Loudness, and Time than in Consonance, Memory and Rhythm.

Lenoir,[4] in a study with two hundred colored fifth grade children, concluded that the colored children were superior to the white children

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1 Karl Gehrkens, Music in the Grade Schools (Boston, 1936), p. 77.

2 Britten L. Riker, "The Ability to Judge Pitch," Journal of Experimental Psychology, XXVI (August, 1946), p. 346.

3 Kenneth L. Bean, "The Musical Talent of Southern Negroes as Measured by the Seashore Tests," Journal of Genetic Psychology, XLIX (September, 1936), p. 247.

4 Z. D. Lenoir, "Measurement of Racial Differences in Certain Mental and Educational Abilities," The Measurement of Musical Development, VII (1935), p. 81.

in both the sense of Time and sense of Rhythm.

The Eaglesons[1] found in a study made on the identification of musical instruments, that though the musically trained group made higher averages than the controlled group which had not been trained, the differences found between the groups were not statistically significant. Some persons without musical training made higher averages than some of the musicians.

Wright[2] discussed that the Seashore Tests should be applied in all controversial cases, regardless of age, to reenforce or establish personal judgment, and also to check on poor teaching.

"A Study of Musically Superior and Inferior Subjects as Selected by the Kwalwasser-Dykema Music Tests" was made by Lehman. This study consisted of a series of educational measurements based on the physiological aspects of the musically talented and untalented children as selected by the Kwalwasser-Dykema Music Tests. One hundred twelve children from the public school system in Brockport, New York, were selected from grades six through twelve. Out of three hundred children tested, sixty-one were chosen whose scores were found to be at the ninetieth percentile or above and fifty-one were chosen whose scores were below the thirty-third percentile. These two groups were compared by a series of measurements, (1) The Kuhlman-Anderson I.Q. Tests, (2) Keystone Tele-Binocular Visual Test, (3) Western Electric Model 2A Audiometer Test, (4) Wrist and Finger Motility Test, (5) Reaction Time Test, (6) Pulse Rate Test, (7) Blood

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[1] Holson V. Eagleson and Oran W. Eagleson, "Identification of Musical Instruments When Heard Directly and Over a Public-Address System," Journal of the Acoustical Society of America, XIX (March, 1947), p. 342.

[2] Francis A. Wright, "The Correlation Between Achievement and Capacity in Music," Journal of Educational Research, XVII (January, 1928), p. 55.

Pressure Test, (8) Basic Metabolism Rate Test.

The following conclusions were drawn:

1. Only a low positive correlation was found between I. Q. and musical talent.

2. Talented subjects tend to have greater visual efficiency than untalented ones.

3. Talented subjects possess better hearing than untalented subjects.

4. The motor response to the visual stimulus of the untalented group was faster.

5. Pulse rate was definitely affected by music in both groups.

6. Talented subjects had a higher blood pressure than untalented subjects.

7. The talented subjects possessed a high basic metabolic rate than the untalented.[1]

In summarizing the first category, Gehrkens wrote that what is called musical talent is actually a combination of a number of abilities. Riker found that the ability to judge Pitch is confined to specially trained individuals. Bean concluded in a study of southern Negroes that the scores were poorer in Pitch, Loudness and Time, than in Timbre, Tonal Memory and Rhythm. Lenoir wrote of Negro superiority in the sense of Time and Rhythm. Holsan and Oran Eagleson found that some persons without musical training made higher averages than some musicians in

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[1] Charles F. Lehman, "A Study of Musicially Superior and Inferior Subjects as Selected by the Kwalwasser-Dykema Music Tests," Journal of Educational Research, XLV (Maroh, 1952), pp. 517-22.

identifying instruments. Wright stated that the Seashore Tests should be applied in all controversial cases. Lehman found that talented subjects possessed better hearing, visual efficiency, higher blood pressure and a higher basic metabolic rate than untalented subjects.

Elizabeth Green wrote in an article which is typical of the second category as follows:

> A mind which is active and alert can accomplish much in a short time. A mind trained to read and perform music at sight without the required speed of reaction is bound to have developed powers of concentration away beyond the mind that putters along at any speed its possessor may happen to desire to use at the moment.[1]

In the survey of a school system, Kwalwasser found that the standards of the Music Supervisors' Council which were supposed to be so easily attainable were beyond the reach of the children.[2]

The general significance of training in music for skills was expressed by Mursell.[3] He wrote:

> It is astonishing how badly and stupidly music is commonly taught to children, and what accomplishment is expected, not only in school classrooms, but in private studios also. There is a fixation upon skill, technique, technical terms, technical symbols, and an ignoring of the widest possible variety of significant and appealing musical experiences and activities.

Seashore[4] said concerning skills in music:

> Enough has been done to show that faulty performance is due

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1 Elizabeth Green, "How Music Helps with Other Subjects," Etude, LXV (May, 1947), p. 293.

2 J. M. Kwalwasser, "Effect of Training Upon Music Talent Tests," Journal of Educational Psychology, Vol. 33 (1942).

3 James L. Mursell, Music and the Classroom Teacher (New York, 1951), p. 265.

4 Carl E. Seashore, The Psychology of Musical Talent (Boston, 1919), p. 288.

in a very large part to sluggish or inadequate critical control by the ear and that this may be improved or sharpened for any specific factor in very brief training for a specific skill.

In summary, there is general agreement that musical training contributes to an alert, well trained mind, and that musicianship is the result of long and hard study; and that all musicial achievement depends on musicianship.

The third category is sex differenoes in music. In keeping with this category, Seashore reported that there are no appreciable sex differenoes in Pitch discrimination.

Gilbert[1] wrote that an assumed sex difference is reflected in the social stereotype that women are more artistic than men, and that the pursuit of the arts is more or less a peculiarly feminine activity. This stereotype seems to be supported by sex differences on certain tests partioularly those of musical talent.

Scheinfield[2] stated that generations of women have studied musio and engaged in musical careers, but the contemporary scene is still looking for a woman composer.

Smith[3] concluded that the superiority of elementary school girls over elementary school boys may fully be accounted for by the prevailing trait of aloofness of the preadolescent boy towards music as girlish and so to be avoided.

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1 G. M. Gilbert, "Sex Differenoes in Musical Aptitude and Training," The Journal of General Psyohology, XVI (January, 1942), pp. 19-20.

2 Amran Scheinfield, You and Heredity (New York, 1950), p. 245.

3 F. O. Smith, "The Effect of Training in Pitch Disorimination," Pshchologioal Momographs, XVI (1914), p. 83.

In the summary of sex differences and music, Gilbert wrote that the social stereotype that women are more artistic than men is supported by certain tests particularly those of musical talent. Scheinfield is still looking for a great woman composer. Smith concluded that elementary girls rate higher than boys because of the prevailing trait of aloofness on the part of the boys.

In the fourth and last category, heredity and environment, it is found that Scheinfield made a genetic study among three groups of artists, in two fields of music, instrumental and vocal. These artists include (1) thirty-six outstanding instrumental musicians of the world, (2) thirty-six principals of the Metropolitan Opera Company and (3) fifty students of the Julliard Graduate School of Music. Scheinfield wanted to answer the question "where does talent come from?" In all three groups, direct questions were asked and answered by the artists themselves. The following conclusions were drawn:

1. Great achievement in both fields of music is correlated with an extremely early start.

2. When both the basic aptitude requirements and the added talent requirements were present, it was found that no environmental uniformity was present. The backgrounds of many of the musicians were highly favorable for talent development, but there were artists such as Grace Moore, Gladys Swarthout and Schnabel emerging from homes where neither parent was musical. In some instances, the background might have been considered almost deadening for musical expression.

3. Where both parents were talented, in most matings one-half to three fourths of the children were talented.

4. Musical talent is, in all probability, inherited through a number of genes acting together, and without the required genes, there can be no musical talent.[1]

Rugg[2] concluded that:

> For the creative impulse is within the child himself. No educational discovery of our generation has such farreaching implications. It has a two fold significance: first, that every child is born with the power to create; second, that the task of the school is to surround the child with an environment which draws out his creative power.

In a summary of this last category, Scheinfield felt that achievement was correlated with an early start. Further, he stated that the background of some outstanding artists have been considered almost deadening for musical expression. Scheinfield also felt that musical talent was inherited through a number of genes acting together. Rugg concluded that it was the task of the school to surround the child with an environment which draws out his creative power.

Summary of Related Literature.-- The literature pertinent to this study may be summarized as follows:

1. What is called musical talent is actually a combination of a number of abilities probably inherited through a number of genes.

2. The ability to judge Pitch is confined to specially trained individuals, however, the Seashore Tests should be applied in all controversial cases.

3. There is Negro superiority in the sense of Time and Rhythm.

4. The Eaglesons found that some persons without musical training

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[1] Amran Scheinfield, You and Heredity (New York, 1950), pp. 235-288.

[2] Harold Rugg, The Child Centered School (New York, 1928), p. 228.

made higher averages than some musicians in identifying instruments.

5. Talented subjects possess better hearing, visual efficiency, higher blood pressure and a higher basic metabolic rate than untalented subjects.

6. The standards of the Music Supervisors' Council are beyond the reach of the children because there is a fixation upon skill, technique, technical terms, technical symbols, and an ignoring of the widest possible variety of significant and appealing musical experiences and activities.

7. The social stereotype that women are more artistic than men is supported by musical tests, however, the musical world is still without a great woman composer.

8. Elementary girls rate higher than boys in music because of the prevailing trait of aloofness on the part of the boys.

9. Great achievement in music is correlated with an early start, therefore, it is the task of the school to surround the child with an environment which draws out his creative powers.

CHAPTER II

PRESENTATION AND INTERPRETATION OF DATA

Introduction.-- Within the broad framework sketched in Chapter I, the procedures used in making comparisons and in determining relationships between musical talent, accomplishment and background and interest of the 110 Sixth Grade Pupils of Edmund Asa Ware Elementary School were stated. These procedures consisted briefly, in (1) selecting the subjects and administering the tests to them according to the directions in the test manuals, (2) computing statistics pertinent to the problem, and (3) making interpretations on the basis of the obtained results. This chapter explains how the performers were rated and evaluated. It presents the findings according to the order in which the tests were administered.

Statistical Measures Used in Computing Data.-- In order to secure answers to this problem, it was necessary to use the following statistical measures: (1) range, to picture scatter in scores and to aid in determining class intervals, (2) median, to indicate the scores above and below which fell fifty percent of the cases, (3) mean, to obtain the average score, (4) standard deviation to determine the amount of dispersion between groups by sex and test components, (5) standard error of difference between means, to indicate the amount of fluctuation, (6) Fisher's "t" test to determine the significance of difference between means, (7) Pearson's Product-Moment Coefficient of Correlation to show relationship, if any, between musical talent and musical accomplishment.

All formulae used in this study are listed in the Appendix.

Performance of Total Group on the Seashore Measures of Musical

Talent.-- By musical talent we mean specific capacities or abilities involved in the hearing, appreciation and performance of music. Many such talents oan be measured before musical education begins. They do not measure training or achievement in music. Neither do they measure intelligence, feeling, the will to work nor a single all inclusive index to musical ability. These measures are not averaged; each score is but an item in the musical profile. Therefore, the oonclusions drawn must be limited specifically to the implication of the factor which has been measured under control. Thus, if we measure the sense of Rhythm, and find a very superior performance, the conclusion is not that the subjects are musical, but merely that the individuals have a very superior sense of Rhythm.

The norms for the Seashore measures make it possible to convert the number of right answers into a ranking order. In this study, percentiles were used. The highest rank, nintieth percentile, represents the score of the highest ten percent in a normal unselected community. The next highest, eightieth peroentile, includes the scores made by the next highest ten percent, and so on to percentile ten which includes scores made by the lowest ten percent of a normal population.

Six sets of data were obtained from the Seashore Measures of Musical Talent for the 110 subjects. Differentiation was made by sex to show scoring on the six oomponents: Pitch, Loudness, Rhythm, Time, Timbre and Tonal Memory. The total group was treated in the same manner.

Data pertaining to the following findings are presented in Table 1, Figure 1 through 6.

In the sense of Pitch, the group scores indicated considerable soatter

in capacity and a relatively low average level of performance. The range was 48 to 13 which showed a mean of 29.80 and a median of 29.64, that was roughly equivalent to the thirtieth percentile. The standard deviation for these measures was found to be 6.12. Approximately 81 subjects obtained scores between one sigma above the mean or 35.92 and one sigma below the mean or 23.68. This distribution exhibited a greater clustering about the mean than would be true if the distribution were a normal one.

For Loudness, the group scores showed scatter again and the percentile ranking was even lower than that for Pitch. These findings were, a range of 45-13, a median of 31.14 and a mean of 31.19. The standard deviation was 6.66. There were 75 pupils who scored between one sigma below the mean or 24.53 and one sigma above the mean or 37.85. This also showed more clustering about the mean than would be true if the distribution were a normal one.

Performances of the subjects in the sense of Rhythm indicated that they ranked at the eighth percentile. There was a goodly amount of dispersion evidenced in the range of 30-9. The mean score was 24.34 and the median was 24.66. When a standard deviation of 4.70 was added and subtracted from the mean, it was found that nearly 87 subjects scored within these measures. This distribution exhibited a greater clustering about the mean than would be true if the distribution were a normal one.

Pertaining to the sense of Time, the students showed greater homogeneity as evidenced in a range of 44 to 18, a mean of 31.90 and a median of 32.44. For this area, the standard deviation was 5.80 which showed that nearly 82 students scored one sigma above the mean or 37.70 and one sigma below the mean, or 26.10. The percentile rank for this group was 40.

In the sense of Timbre, the group scores pointed out some scatter in capacity and a low average level of performance. The range was 41-19 and the standard deviation was 5.04. The mean of 28.74 and the median of 28.55 was roughly equivalent to the 20 percentile. Approximately 74 subjects obtained scores one sigma above the mean or 33.98 and one sigma below the mean or 23.90. This distribution also showed clustering about the mean.

Considering Tonal Memory, the group ranked lowest, in the 10 percentile. There was considerable scatter in capacity. The range was 30 - 4, the median 10.62, and the mean, 12.42. The standard deviation, 6.42 indicated that 81 cases attained scores between one sigma above the mean or 18.84 and one sigma below the mean or 6.00. This distribution also exhibited a large clustering about the mean.

Performance of the Total Group on the Kwalwasser-Ruch Test of Musical Accomplishment.-- In selecting a test that would give some indication of the musical accomplishment of the sixth grade subjects, the writer chose the Kwalwasser-Ruch Test because it was designed to measure the achievement of pupils in the typical public school music course in the elementary and high school grades. Every item in the test has been subjected to repeated experimentation. It has been checked against a number of courses of study in city school systems which have received national recognition for their work in public school music. The reliability of the total scores and also of the scores on the ten separate tests was determined from 167 sixth, eighth, tenth and twelfth grade pupils. The correlations were figured by the method of splitting the test items into chance halves, i.e., correlating the sum of the points earned on the even-numbered items with the points earned on the odd-numbered items. The

TABLE 1

RESULTS OF THE PERFORMANCES OF 110 SIXTH GRADE PUPILS UPON THE SEASHORE MEASURES OF MUSICAL TALENT AND THE KWALWASSER-RUCH TEST OF MUSICAL ACCOMPLISHMENT IN TERMS OF RANGES, MEASURES OF CENTRAL TENDENCY, STANDARD DEVIATIONS AND PERCENTILES

Measures of Musical Talent	Number	Range	Median	Mean	Standard Deviation	Approximate Percentile Equivalent to Median
Pitch	110	48-13	29.64	29.80	6.12	30
Loudness	110	45-13	31.13	31.19	6.66	20
Rhythm	110	30-9	24.66	24.34	4.70	80
Time	110	44-18	32.44	31.90	5.80	40
Timbre	110	41-19	28.55	28.94	5.04	20
Tonal Memory	110	30-4	10.62	12.42	6.42	10
Kwalwasser-Ruch Test of Musical Accomplishment	110	120-33	62.27	44.77	21.40	26

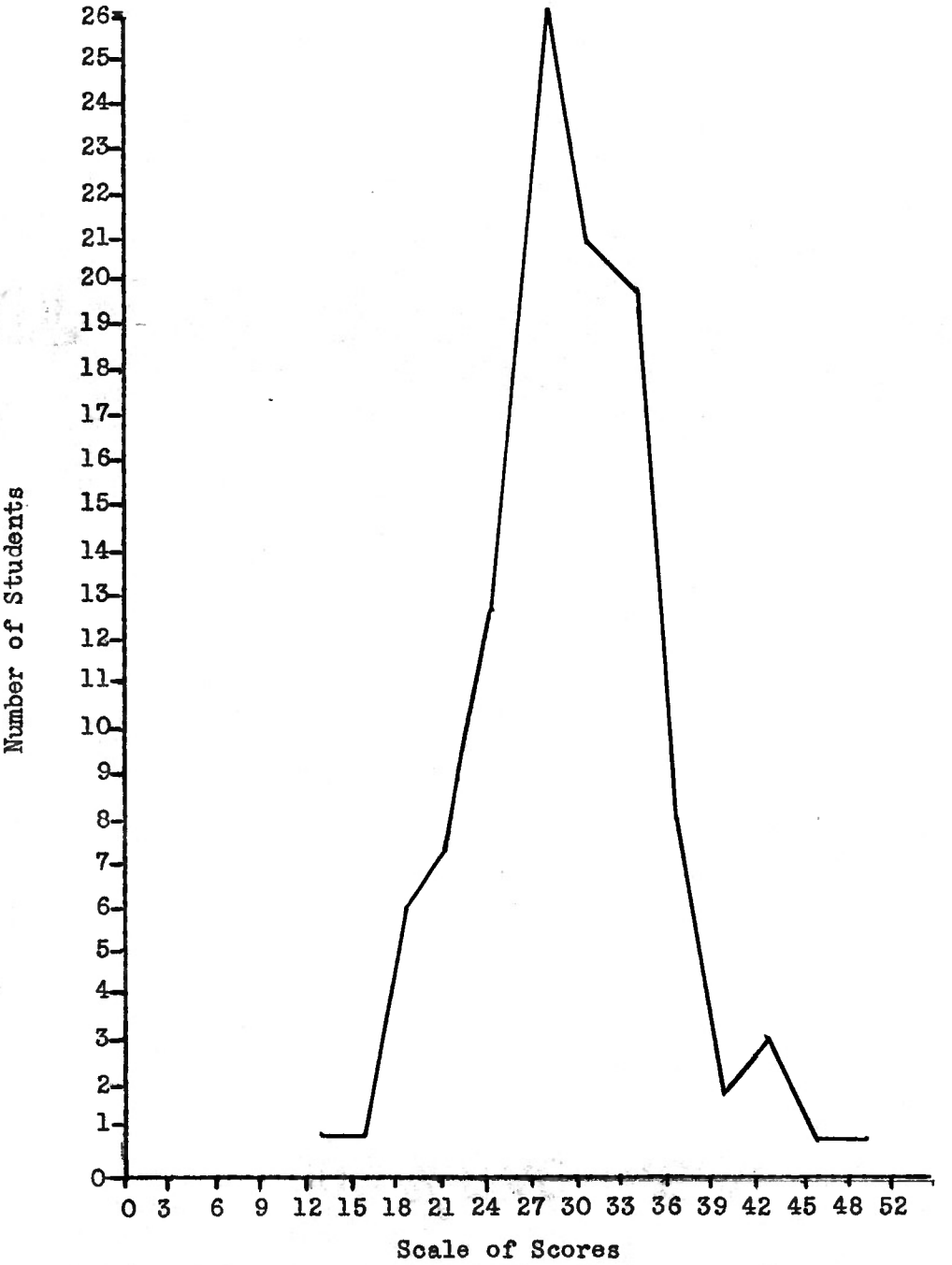

Figure 1.- Frequency Polygon Plotted from the distribution of 110 pitch scores in Table 1.

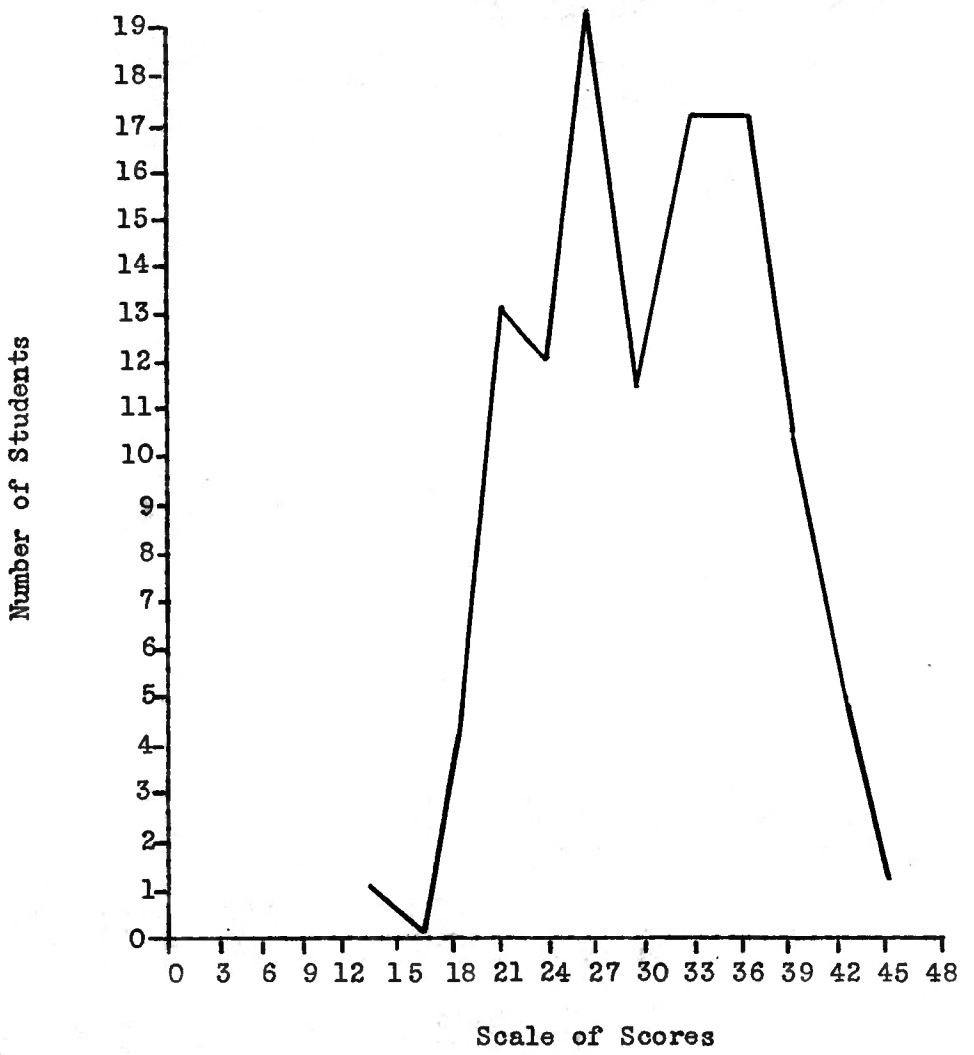

Figure 2.- Frequency polygon plotted from the distribution of 110 Loudness scores in Table 1.

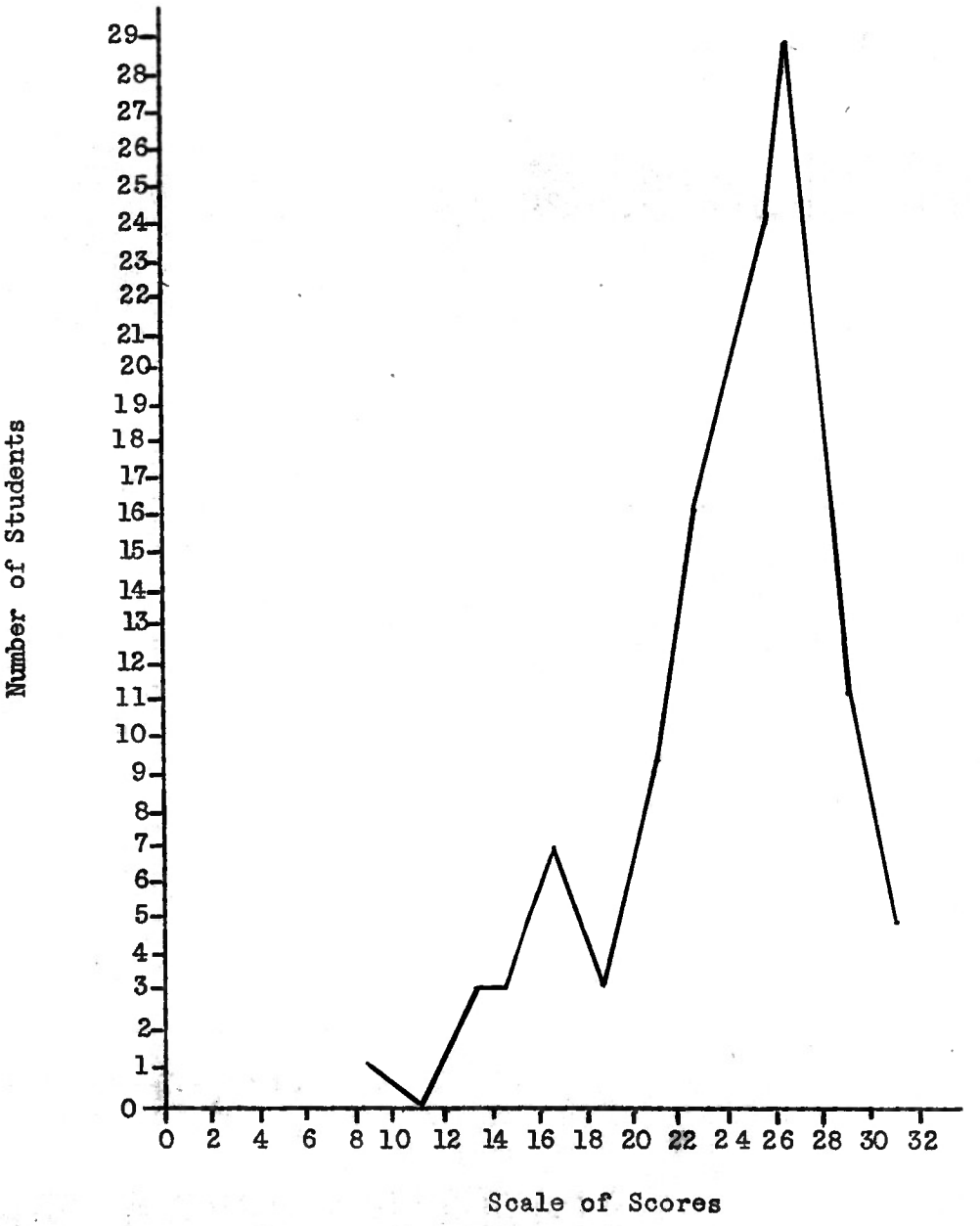

Figure 3.- Frequency polygon plotted from the distribution of 110 Rhythm scores in Table 1.

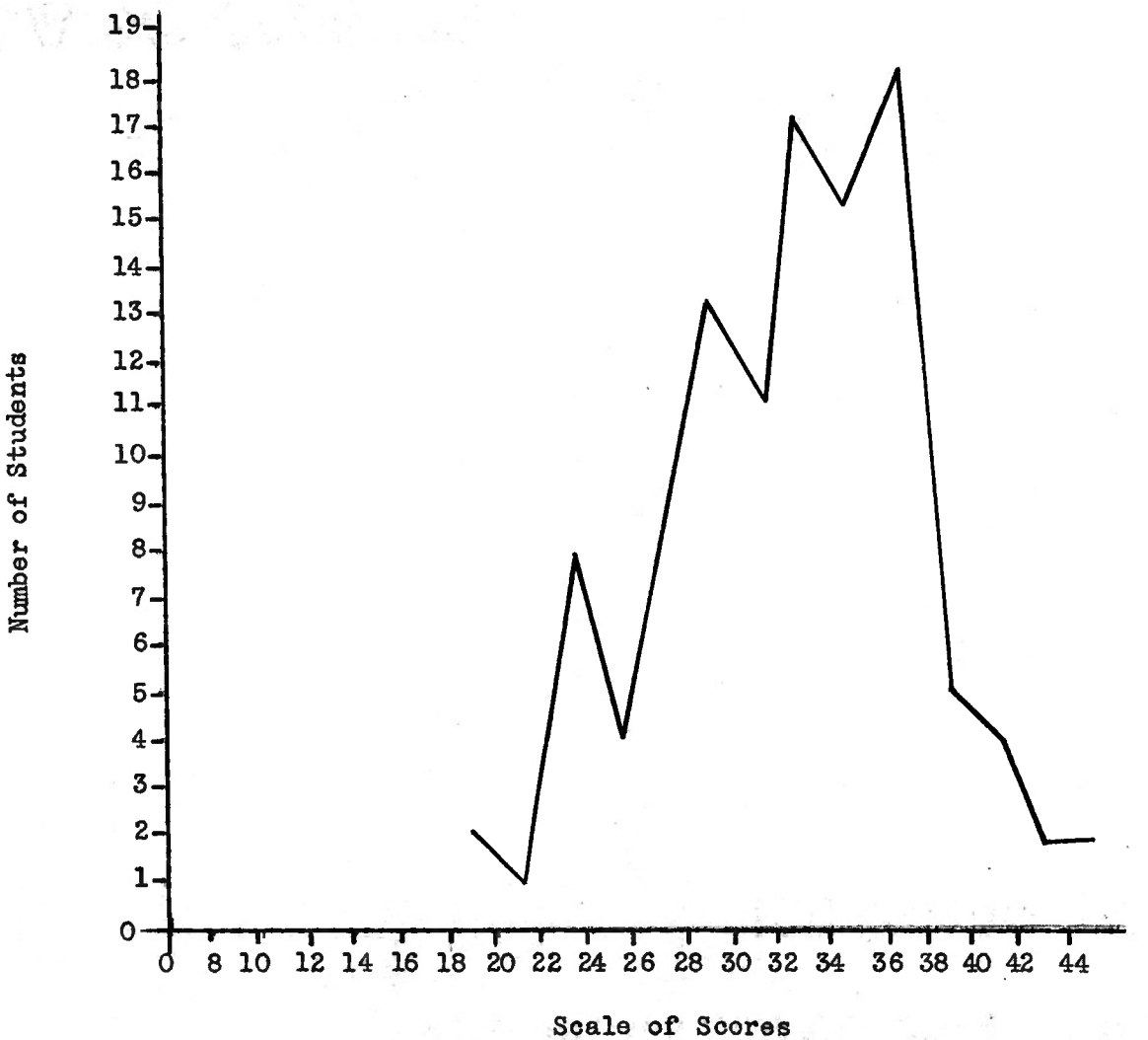

Figure 4.- Frequency polygon plotted from the distribution of 110 scores for Time in Table 1.

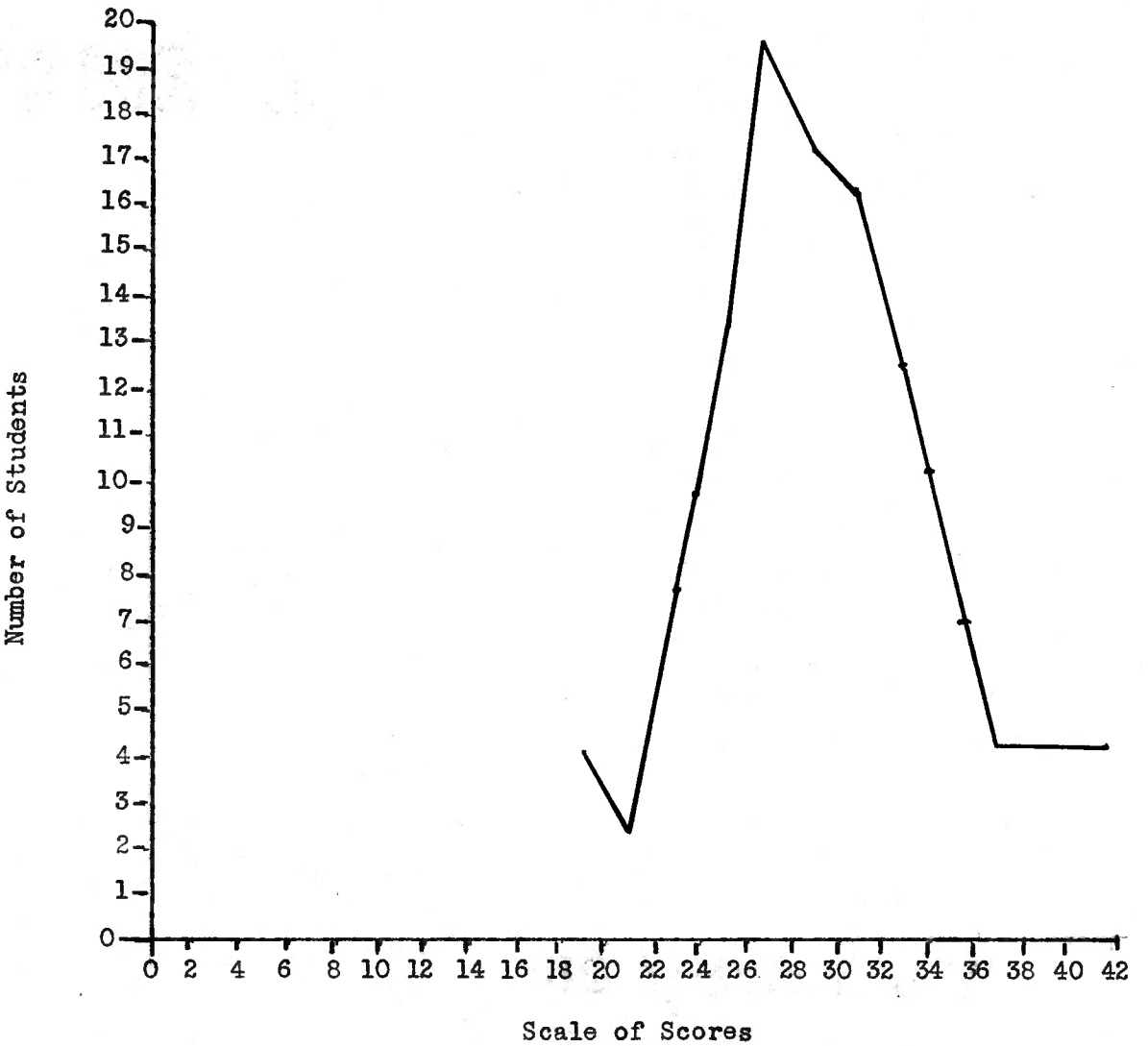

Figure 5.- Frequency polygon plotted from the distribution of 110 Timbre scores in Table 1.

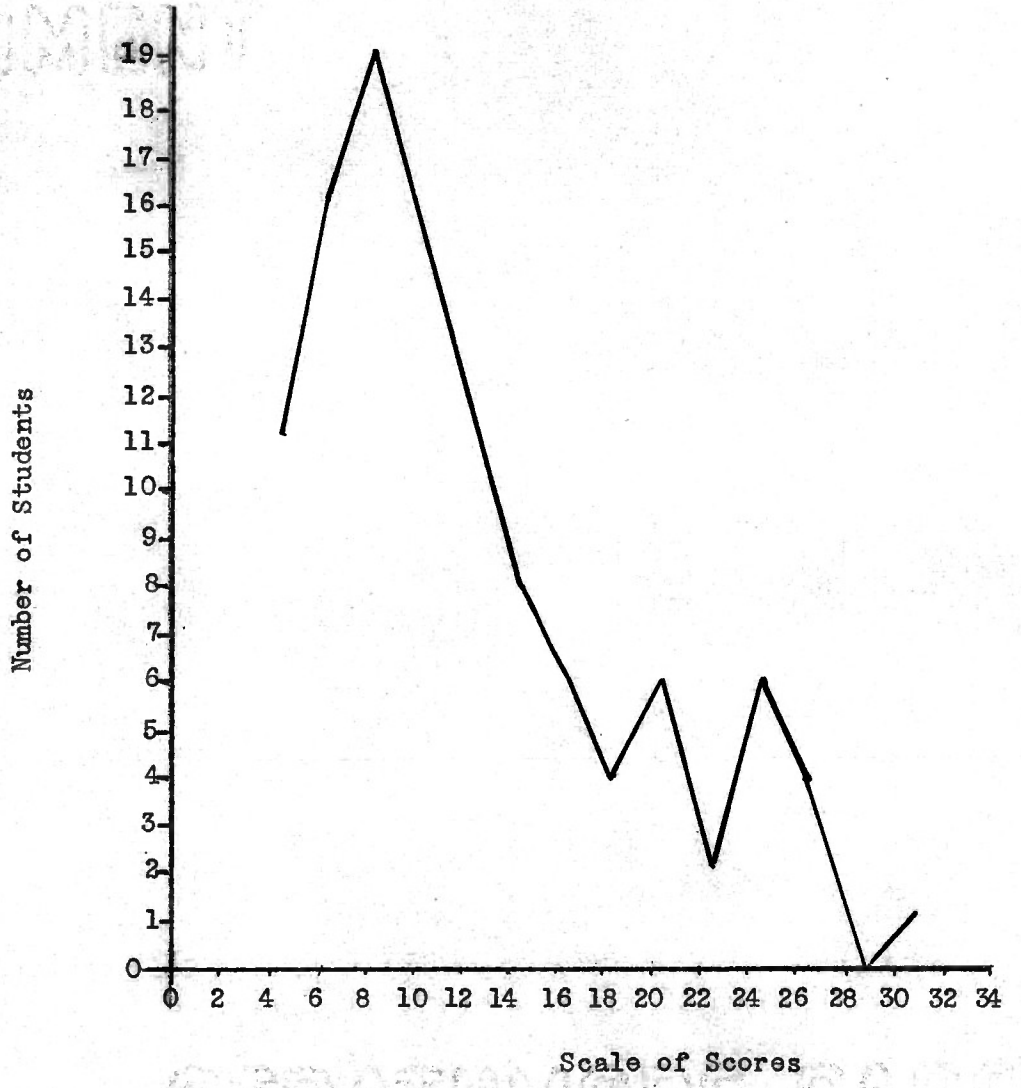

Figure 6.- Frequency polygon plotted from the distribution of 110 Tonal Memory scores in Table 1.

correlation for the test as a whole was found to be .97 for the group studied. The norms are based upon scores earned by 5,414 pupils in grades IV to XII. In this study, only total scores were used.

From the use of this instrument, the group of 110 subjects denoted an extreme amount of dispersion and registered a very low performance evidenced by a percentile rank of 26. The range of scores was 120 - 33. The mean for this test was 44.77, while the median was 62.57. A standard deviation of 21.40 indicated that approximately 52 of the cases fell one sigma above the mean or 66.17 and one sigma below the mean or 23.37. This means that there was considerable skewness above the mean or to the right. A tabular picture of these data is found in Table 1 and presented graphically in Figure 7.

Summary of Total Group Performance on Tests of Musical Talent and Accomplishment.-- The following conclusions were drawn in answering the first two purposes of this study, namely, (1) What is the general level of musical talent? and (2) What is the general level of musical accomplishment?

1. That for the sense of Pitch, the group ranked in the thirtieth percentile, with considerable scatter in capacity and relatively low average level of performance.

2. That for the sense of Loudness, the pupils' scores showed low performance again with a percentile rank of twenty which was lower than that for Pitch.

3. That the eightieth percentile for Rhythm was the highest rank obtained by the pupils.

4. That even though the group ranked in the fortieth percentile of

Time, there was a greater (homogeneity) shown.

5. That the students showed scatter in capacity and a low performance in the sense of Timbre. The percentile rank of twenty was the same as that for Loudness.

6. That the group scores fell in the tenth percentile for the Tonal Memory which was the lowest rank of the six talents measured.

7. That the 110 subjects showed an extreme amount of dispersion and registered a very low performance in accomplishment. This was evidenced by a percentile rank of 26.

Musical Background and Interest Inventory.-- A possible criterion of responsiveness to music is the degree of interest in musical activities. Several techniques suggest themselves, all depending more or less on the general assumption of the degree of persistence of spontaneous choice of musical activity being a measure of interest. Individual differences might therefore, be measured in the relative amount of time spent in playing a musical instrument; the frequency of occurrence of spontaneous activity of a musical type such as humming, singing, or marching; and the voluntary attendance or participation in musical activities. Such individual differences in the modes of spontaneous reaction may be of very great significance as measures of musical responsiveness.

Another possible criterion of responsiveness or lack of responsiveness to music could be environmental conditions favorable or not favorable to the development of interest and talent. This writer was interested in finding out if those pupils who rated highly in talent and accomplishment came from homes where some provision was provided for participation in musical activities and experiences. It would be interesting also to see

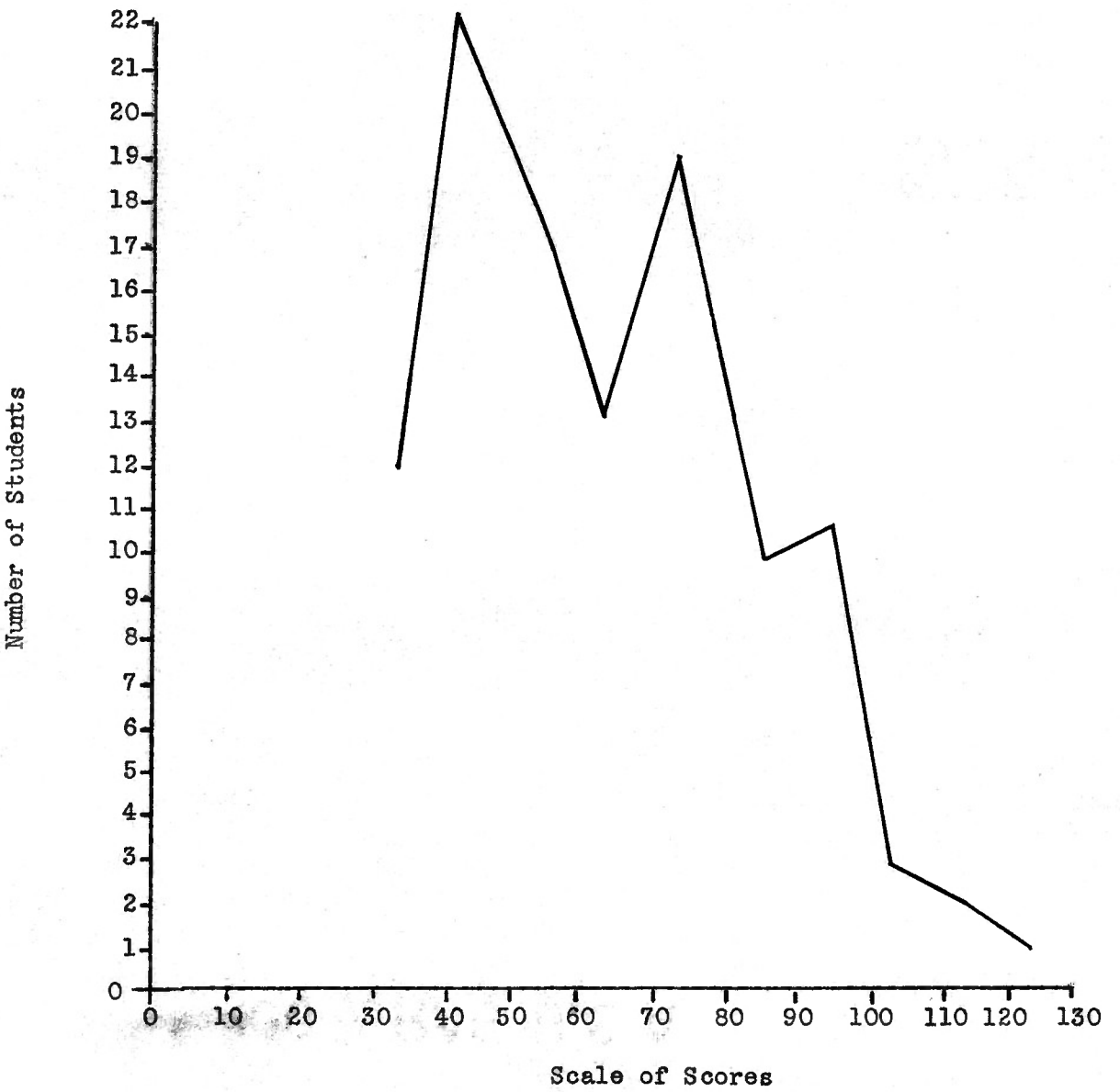

Figure 7.- Frequency polygon plotted from the distribution of 110 Accomplishment scores in Table 1.

if any subjects who rated highly in these two measures came from environments which provided nothing to encourage musical expression. As Scheinfield says,

> Again and again we find evidence of talent cropping out with apparent spontaneity as an orchid might suddenly appear in a field of dandelions.[1]

In order to arrive at some conclusion concerning the subjects studied, this writer constructed a Background and Interest Inventory. There were thirty-six questions, all answered by the pupils themselves. These questions generally included the following:

1. Participation in musical activities by the pupils.
2. Interest and participation of one or both parents in musical activities.
3. Musical instruments in use in the homes.
4. Types of music enjoyed.
5. Best liked radio and television programs.

This inventory was not scaled. The responses were studied and totaled. The pupils were divided into two groups: (1) those whose backgrounds were highly favorable for musical development and (2) those whose backgrounds were almost deadening for musical expression. The criteria for rich background and interest were (1) the study of a musical instrument for at least one year, (2) participation in musical activities on the part of one or both parents and (3) enjoyment of what is considered "better" music. Those pupils in the meager group were rated (1) no study of a musical instrument, (2) no participation in extra musical experiences at

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[1] Amran Scheinfield, You and Heredity (New York, 1939), p. 258.

home nor at school and (3) no participation in musical activities by the parents.

There were seven pupils considered to have rich musical background and interest. The remaining 103 were in the meager group. This means, of course, that if any musical experiences are to be provided for the 92.3 percent of this group, the responsibility lies with the school attended by the subjects. It is up to the school to provide the best and a large amount of musical experiences, so as to develop some degree of appreciation for this art. Also, it is possible, in some instances, to encourage parents to provide musical opportunities for those pupils who possess a high degree of interest and talent.

A copy of the instrument used in this inventory and a summary of findings can be found in the Appendix of this study.

Comparison of Boys and Girls on Talent and Accomplishment.-- For purposes of this study, subjects were divided by sex in order to compare the performances of 57 boys and 53 girls on the Seashore Measures of Musical Talent and the Kwalwasser-Ruch Test of Musical Accomplishment.

Data relative to these findings are presented in Table 2.

A consideration of the data obtained for the sense of Pitch revealed that girls rated higher than boys. There was a mean difference of 5.22 which favored the females. A "t" of 4.11 indicated that this was highly significant at the .05 level of confidence.

For this sense, the girls' scores indicated considerable scatter and a low average level of performance. The range was 48-17 with a median of 30 and a mean of 34. The standard deviation for this sense was found to be 6.09. Approximately 39 subjects obtained scores one sigma below and

TABLE 2

A COMPARISON OF 57 BOYS AND 53 GIRLS OF THE SIXTH GRADE ON THE SEASHORE MEASURES OF MUSICAL TALENT AND THE KWALWASSER-RUCH TEST OF MUSICAL ACCOMPLISHMENT

Groups		Number	Range of Scores	Median	Mean	Standard Deviation	Difference Between Means	t*	Significance of Difference
Pitch	Boys	57	45-13	29.00	28.78	7.11	5.22	4.11	Significant
	Girls	53	48-17	30.00	34.00	6.09			
Loud-ness	Boys	57	44-13	32.25	31.48	7.17	.54	.41	Not Significant
	Girls	53	45-21	29.20	30.94	6.40			
Rhythm	Boys	57	30-9	24.37	23.00	4.90	1.24	1.36	Not Significant
	Girls	53	30-13	25.00	24.24	4.64			
Time	Boys	57	44-18	32.60	31.70	6.46	.08	.07	Not Significant
	Girls	53	44.23	31.80	31.78	5.00			
Tim-bre	Boys	57	44-19	28.37	28.74	5.16	.32	.33	Not Significant
	Girls	53	49-19	28.60	29.06	4.82			
Tonal Memory	Boys	57	30-4	10.41	11.76	6.32	2.08	1.72	Not Significant
	Girls	53	27-5	52.50	13.84	6.30			
Kwala-wasser Ruch Test of Accom-plish-ment	Boys	57	115-33	69.91	66.20	18.10	5.50	1.41	Not Significant
	Girls	53	120-35	71.37	71.70	22.10			

*With 108 degrees of freedom, t must be 1.984 to be significant at the .05 level of confidence.

above the mean. This showed that the distribution was not a normal one.

For this same measure, the scores of the boys showed a great deal of dispersion and a low level of performance. Their scores ranged from 45-13 with a median of 29.00, a mean of 28.78 and a standard deviation of 7.11. Nearly 44 boys obtained scores one sigma below and one sigma above the mean, or from 21.67 - 35.89. This indicated a great deal of clustering about the mean.

In the sense of Loudness, the scores revealed that the boys rated slightly higher than the girls. There was a mean difference of only .54 points. This was found to be not significant at the .05 level of confidence.

The scores of the boys showed a good amount of scatter as indicated by a range of 44 - 13 for the sense of Loudness. The median was 32.25 and the mean was 31.48. When the standard deviation was computed with the mean, it was found that approximately 35 of the 57 boys scored between one sigma above and below the mean. This indicated nearly a normal curve.

The scores for the girls revealed that their range was not as wide and their level of performance was better. This was evidenced by a median of 29.20, a mean of 30.94 and a standard deviation of 6.40. This showed that 35 of the 53 girls scored one sigma above and one sigma below the mean. This distribution of scores was normal.

The Seashore Test for the sense of Rhythm revealed that the girls were superior to the boys. There was a mean difference of 1.24 and a "t" of 1.36. This was found to be not statistically significant at the .05 level.

The scores of the girls ranged from 30 - 13 with a median of 25.00 and a mean of 24.24. The standard deviation of 4.64 showed that approximately 48 scores between one sigma below and one sigma above the mean. This in-

dicated a curve skewed to the right.

For this same sense, the boys showed a greater distribution of scores and a slightly lower level of performance. The scores ranged from 30 - 9 with a median of 24.37, a mean of 23.00 and a standard deviation of 4.90. Nearly 43 obtained scores of 18.10 and 27.90 or between one sigma below and one sigma above the mean. This indicated a curve skewed to the right.

Performances of the two groups on the sense of Time pointed out that there was more homogeneity than for the other senses. Further, it was noted that there was a mean difference of only .08 in favor of the girls. When tested by the "t" technique, this was found to be not significant at the .05 level of confidence.

On the sense of Time, the scores for the girls showed a range of from 44 - 23 with only .02 points between the mean and median. The standard deviation was 5.00 which indicated that approximately 36 subjects scored one sigma below the mean or 26.78 and one sigma above the mean of 26.78. This distribution represented a normal curve.

The distribution of scores of the boys for the sense of Time showed a wider range of from 44 - 18. These subjects had a median of 32.60 and a mean of 31.70. The standard deviation was 6.46, which showed that nearly 42 boys earned scores one sigma on both sides of the mean or from 25.25 to 38.17. This indicated a greater clustering about the mean than was true for the girls.

Considering the sense of Timbre, test scores revealed that the girls rated a mean difference of .32 points higher than the boys. This difference did not indicate superiority of the girls over the boys since a "t" of .33 is not statistically significant at the .05 level of confidence.

The scores for the girls for Timbre revealed a curve slightly skewed to the right. There was a range of from 49 - 19, a median of 28.60 and a mean of 29.06. The standard deviation of 4.82 showed that approximately 39 cases fell one sigma on each side of the mean.

For this same sense, the scores of the boys showed less scatter and a lower level of performance. The range was from 41 - 19, the mean, 28.74 and the median, 28.37. The standard deviation of 5.66 showed that nearly 40 cases fell between 23.38 and 33.90. This distribution exhibited more clustering about the mean than would be true if the distribution were a normal one.

According to the data derived from the test for Tonal Memory, the girls were superior to the boys. There was a mean difference of 2.08 which favored the females. However, when tested by the "t" technique, it was found that the chances were that the girls were not superior in this sense, since a "t" of 1.72 is not statistically significant at the .05 level of confidence.

It was noted that the scores of the girls in Tonal Memory exhibited a wide dispersion and a low performance level. This was evidenced by a range of 27 - 5, a median of 12.50 and a mean of 13.84. The standard deviation of 6.30 indicated that nearly 31 scored between one sigma below and one sigma above the mean or from 7.54 and 20.14. For the curve to be normal, 38 scores should have fallen between these limits.

The boys exhibited more scatter in scores and a lower level of performance than the girls on Tonal Memory. Their range was from 30 - 4, the median, 10.41 and the mean, 11.76. The standard deviation of 6.32 indicated that nearly 42 cases fell 5.44 and 18.08 on each side of the mean, showing

greater clustering about the mean.

The scores made by the two groups on the accomplishment test are shown in Table 2.

It is noted that the girls scored higher than boys in accomplishment. The mean difference between the two groups was 5.50. The "t" of 1.41 indicated that the difference was not a statistically significant one.

For the accomplishment test, the scores of the girls exhibited a great deal of dispersion and a low level of performance with scores ranging from 120 - 35, a median of 71.37 and a mean of 71.70. The standard deviation of 22.10 showed that approximately 34 of the girls scored between one sigma below and one sigma above the mean or from 49.60 to 93.80. For the curve to be normal, approximately 36 scores should have fallen within these limits.

The scores of the boys also exhibited a large amount of scatter and a low level of performance. The median was 69.94, mean, 66.20 and standard deviation, 18.10. When this last measure was computed with the mean, it was found that approximately 31 boys scored between the limits of 48.10 and 84.30. This did not indicate a normal distribution.

Summary of Comparison Between Boys and Girls on Tests of Talent and Accomplishment.-- After comparing the performance of 57 boys and 53 girls on the Seashore Measures of Musical Talent and the Kwalwasser-Ruch Test of Musical Accomplishment, the following conclusions were drawn:

1. Girls scored higher than boys in the sense of Pitch. This was found to be highly significant at the .05 level of confidence.

2. Boys rated slightly higher than girls on the sense of Loudness. However, this was not significant at the .05 level of confidence.

3. Girls rated higher than boys on the sense of Rhythm. This was

statistically unreliable at the .05 level of confidence.

4. Girls rated slightly higher than boys on the sense of Time. This was found to be not significant at the .05 level.

5. Girls rated higher than boys on the sense of Timbre. This was found to be not significant at the .05 level.

6. Girls rated higher than boys on the sense of Tonal Memory. This is unsignificant at the .05 level of confidence.

7. Girls rated higher than boys in accomplishment. It was concluded that this was not statistically significant.

Correlation Between Accomplishment and Talent.-- In order to determine the degree of relationship, if any, between musical talent and accomplishment, the coefficient of correlation was computed between the scores made on the two tests by the 110 subjects.

Table 3 presents this data in tabular form.

TABLE 3

DATA SHOWING RELATIONSHIP BETWEEN MUSICAL ACCOMPLISHMENT AND MUSICAL TALENT

TALENT	Pitch	Loudness	Rhythm	Time	Timbre	Tonal Memory
NUMBER	110	110	110	110	110	110
*r with Accomplishment	.101	.355	.233	-.826	.273	.374

*With 108 degrees of freedom, r must be .195 to be significant at the .05 level of confidence.

Close inspection of this table reveals that the r between Pitch and Accomplishment was .101. This was found to be not significant since r

does not exceed .195 at which r is significant at the .05 level of confidence.

The r between the sense of Timbre and Accomplishment indicated that there was a positive relationship between these two variables. This was statistically reliable since an r of .355 exceeds .195 at which r is significant at the .05 level.

The results obtained for the correlation between the sense of Rhythm and Accomplishment, revealed that there was a relationship between these two variables. The reliability of this was based on the fact that an r of .233 is higher than an r of .195 at which r is signficant at the .05 level of confidence.

The r between the sense of Time and Accomplishment revealed a negative high correlation of -.826. This r exceeds the r of .195 at which r is significant at the .05 level, therefore, it is statistically significant.

As indicated in Table 3, the r between the sense of Timbre and Accomplishment was .273 which means that there was a relationship between these two variables. With 108 degrees of freedom, r must be .195 to be significant at the .05 level of confidence.

The r of .374 between Accomplishment and Tonal Memory indicated there was a positive relationship. This was found to be statistically reliable since .374 exceeds .195 at which r is significant at the .05 level of confidence.

Comparison of Pupils with Rich Musical Background and Interest and Others with Meager Background and Interest Who Scored Above the Median of Tests of Musical Talent and Accomplishment.-- A study of the performances of the subjects on tests of musical talent and accomplishment revealed that

there were some subjects considered to have meager background and interest but scored above the median on both tests. The writer made a comparison of the scores of these subjects with the scores of those seven pupils considered to have rich musical background and interest to determine if there was a significant difference between the two groups.

Data picturing the results of this comparison are found in Table 4.

In the sense of Pitch, subjects in the meager group scored higher than those in the rich group, with a difference of 5.81 between the two means. This was found to be significant at the .05 level of confidence.

For the sense of Pitch, the meager group had a median score of 39.90, a mean score of 39.67 and a standard deviation of 5.37. This indicated that eleven pupils obtained scores between 34.30 and 45.04, or one sigma above and one sigma below the mean. This represented a distribution skewed to the left.

Those pupils in the rich group made scores on the sense of Pitch ranging from 45-24, with a median of 33.00, a mean of 33.86, and a standard deviation of 2.88. Five of the seven scored between one sigma above and one sigma below the mean or from 30.98 to 36.74. This showed a greater clustering about the mean than would be true if the distribution were a normal one.

Scores for the sense of Loudness indicated that the meager group again scored higher than the rich group. There were a difference of 9.86 between the means of the groups. When tested by the "t" technique, it was found that a "t" of 4.13 is highly significant at the .05 level.

For the meager group in Loudness, the scores ranged from 44-37, with a median of 39.65, a mean of 40.00 and a standard deviation of 3.05. This

TABLE 4

REPORT OF CERTAIN STATISTICAL MEASURES COMPUTED FOR PURPOSES OF COMPARING PERFORMANCES OF ONE GROUP OF SIXTH GRADE PUPILS WITH RICH MUSICAL BACKGROUND AND INTEREST AND OTHERS WITH MEAGER BACKGROUND AND INTEREST WHO SCORED ABOVE THE MEDIAN ON THE SEASHORE AND THE KWALWASSER-RUCH TESTS

Groups		Number	Range of Scores	Median	Mean	Standard Deviation	Difference Between Means	t*	Significance of Difference
Pitch	Rich	7	45-24	33.00	33.86	2.88	5.81	2.43	Significant
	Meager	12	48-36	39.90	39.67	5.37			
Loudness	Rich	7	42-13	28.00	30.14	3.93	9.86	4.13	Significant
	Meager	20	44-37	39.65	40.00	3.05			
Rhythm	Rich	7	30-22	24.40	25.85	1.68	.15	.22	Not Significant
	Meager	70	30-23	26.35	26.00	1.88			
Time	Rich	7	36-28	32.40	32.49	2.24	5.27	5.32	Significant
	Meager	33	44-33	27.45	37.76	2.75			
Timbre	Rich	7	40-27	28.50	30.70	3.18	6.48	4.72	Significant
	Meager	16	41-35	37.40	37.18	2.95			
Tonal Memory	Rich	7	30-7	13.00	18.14	2.55	6.55	2.27	Significant
	Meager	13	30-21	24.78	24.69	2.46			
Test of Musical Accomplishment	Rich	7	120-42	84.50	86.71	2.56	16.49	1.91	Not Significant
	Meager	10	115-96	101.5	103.20	3.78			

*On the basis of .05 level of confidence.

pointed out that seventeen of the twenty subjects in this group earned scores between one sigma above and one sigma below the mean or from 36.95 to 43.05. This indicated a distribution skewed to the left.

On the sense of Loudness, the pupils in the rich group made scores ranging from 42-13, showing considerable scatter and low performance. A median of 28.00, a mean of 30.14 and a standard deviation of 3.93 revealed that only one pupil scored between 26.21 and 34.07. This indicated a bimodal distribution.

In the sense of Rhythm, the meager group scored slightly higher than the rich group as indicated by a difference of only .15 between the two means. The "t" of .22 pointed out that this difference was not a significant one.

The scores for the meager group in Rhythm were not so scattered as those of the rich group and there was a higher level of performance. There was a median of 26.35, a mean of 26.00 and a standard deviation of 1.88. Inspection of the distribution showed that fifty-five of the 70 scored between one sigma above and one sigma below the mean. This indicated a great clustering about the mean.

The rich group performed at a high level in Rhythm with scores ranging from 30-22, a median of 24.40 and a mean of 25.85. The standard deviation of 1.68 pointed out that only one of the seven subjects scored between one sigma above and one sigma below the mean. This represented a bimodal distribution.

A consideration of the sense of Time revealed that the meager group rated higher than the rich group with a difference of 5.27 between the means. With thirty-eight degrees of freedom, this difference was found to

be highly significant at the .05 level.

On the sense of Time, scores of the meager group revealed a higher level of performance than those of the rich group. The range of 44-33, median of 37.45, mean of 37.76 and standard deviation of 2.75 showed that twenty-six of the subjects scored between 35.01 and 40.50. This indicated considerable clustering about the mean.

For the rich group in the sense of Time, the range of 36-28 indicated that the amount of scatter was small and that the performance was relatively low. There were a median of 32.40, a mean of 32.49 and a standard deviation of 2.24. There were four of the seven cases who scored between one sigma above the mean and one sigma below the mean. This distribution approximated a normal curve.

The meager group scored higher than the rich group on the sense of Timbre. This was concluded by observing that the difference between the two means was 6.48 and that there was a "t" of 4.72. With twenty-one degrees of freedom, this was found to be highly significant at the .05 level of confidence.

The meager group on the sense of Timbre exhibited relatively small scatter and a high level of performance. This was indicated by a range of from 41 to 35, a median of 37.40, a mean of 37.18 and a standard deviation of 2.95. Fifteen of the sixteen subjects in this group scored between 34.23 and 40.13. This showed great clustering about the mean and skewness to the left.

A consideration of the rich group on the sense of Timbre pointed out that the amount of dispersion in scores was greater than that for the meager group. The range was 40-27; the median, 28.50; the mean, 30.70.

The standard deviation of 3.18 indicated that four of the seven pupils scored between one sigma below the mean and one sigma above the mean. This distribution was approximately a normal one.

It was observed that the meager group scored higher than the rich group on the sense of Tonal Memory, with a difference of 6.55 between the means. A "t" of 2.27 indicated that this was significant since, with 18 degrees of freedom, "t" is 2.101.

For the sense of Tonal Memory, the scores of the meager group showed a small amount of scatter and a high level of performance. The range was from 30-21, with a median of 24.78; a mean of 24.69 and a standard deviation of 2.46. It was noted that ten of the thirteen subjects scored between one sigma above and one sigma below the mean. This indicated a greater clustering about the mean than would be true if the distribution were a normal one.

In Tonal Memory, the rich group showed considerable dispersion and a low level of performance. This was pointed out by a range of 30-7, a median of 13.00 and a mean of 18.14. The standard deviation of 2.55 showed that none of the pupils scored between the limits of 15.59 and 20.69. This indicated a bimodal distribution.

The comparison of the pupils with rich musical background and interest and others with meager background and interests who scored above the median on accomplishment is shown in Table 4.

In accomplishment, the meager group again rated higher than the rich group with a difference of 16.49 between the means and a "t" of 1.91. With fifteen degrees of freedom, this "t" was found to be not significant at the .05 level of confidence.

The scores of the meager group in accomplishment revealed a small amount of scatter with a high level of performance. This was shown by a range of 115-96, a median of 101.5, a mean of 103.20 and a standard deviation of 3.78. This indicated that two of the ten subjects scored one deviation on each side of the mean.

In accomplishment, the scores of the rich group showed a great deal of scatter and low level of performance with a range of 120-42, a median of 84.50, a mean of 86.71 and a standard deviation of 2.56. This pointed out that none of the pupils in this group scored between one sigma above the mean and one sigma below the mean. This distribution indicated a bimodal picture.

Summary of Comparisons Between Scores of Subjects with Rich Musical Background and Interest and Others with Meager Background and Interest Who Scored Above the Median.-- After comparing the two groups on tests of musical talent and accomplishment, the writer drew the following conclusions:

1. The meager group scored higher than the rich group on the sense of Pitch as indicated by a difference of 5.81 between means. The "t" of 2.43 showed significance at the .05 level of confidence.

2. The difference of 9.86 favored the meager group on the sense of Loudness. The meager "t" of 4.13 denoted high significance.

3. The slight difference of .15 was in favor of the meager group on the sense of Rhythm with a "t" of .22 indicated no significance at the .05 level.

4. On Time, the meager group scored higher than the rich group with a difference of 5.27 and a "t" of 5.32 pointing out very high significance.

5. It was very significant that the meager group scored higher than the rich group on the sense of Timbre with a difference of 6.48 between means and a "t" of 4.72.

6. On the sense of Tonal Memory, the meager group scored higher than the rich group as evidenced by a difference of 6.55 between means and a significant "t" of 2.27.

7. In accomplishment, it was significant that the meager group scored higher than the rich group as shown by the difference of 16.49 between means and the "t" of 1.91.

Comparison of Scores Made by Subjects with Rich Musical Background and Interest and a Random Sampling of Others with Meager Background and Interest.-- In order to compare the test scores on talent and accomplishment of those seven pupils with rich musical background and interest with scores of others in the meager background and interest group, the writer selected a random sampling of scores made by seven pupils in the meager group.

Data showing this comparison are found in Table 5.

In the sense of Pitch, subjects in the rich group scored higher than those in the meager group. There was a difference of 3.01 between the two means, but a "t" of .90 indicated that this difference was not significant at the .05 level of confidence.

Scores on Pitch of the rich group revealed a considerable amount of scatter with a relatively high level of performance. The range was from 45-24, the median, 33.00, the mean, 33.86 and standard deviation, 2.88. Five of the seven subjects scored between one sigma above and one sigma below the mean, or from 30.98 and 36.74, showing a greater amount of

TABLE 5

REPORT OF CERTAIN STATISTICAL MEASURES COMPUTED FOR PURPOSES OF COMPARING PERFORMANCES OF ONE GROUP OF SIXTH GRADE PUPILS WITH RICH MUSICAL BACKGROUND AND INTEREST AND A RANDOM SAMPLING OF OTHERS WITH MEAGER BACKGROUND AND INTEREST ON THE SEASHORE TEST OF MUSICAL TALENT AND THE KWALWASSER-RUCH TEST OF MUSICAL ACCOMPLISHMENT

Groups		Number	Range of Scores	Median	Mean	Standard Deviation	Difference Between Means	t*
Pitch	Rich	7	45-24	33.00	33.86	2.88	3.01	.90
	Meager	7	42-26	28.00	30.85	3.66		
Loudness	Rich	7	42-13	28.00	30.14	3.93	3.14	.63
	Meager	7	44-24	28.50	33.28	3.76		
Rhythm	Rich	7	30-22	24.40	25.85	1.68	1.85	1.06
	Meager	7	27-19	23.40	24.00	3.00		
Time	Rich	7	36-28	32.40	32.49	2.24	.14	.11
	Meager	7	38-28	31.40	32.28	5.68		
Timbre	Rich	7	40-27	28.50	30.70	3.18	1.70	.90
	Meager	7	32-24	30.90	29.00	2.48		
Tonal Memory	Rich	7	30-7	13.00	18.14	2.55	8.14	2.02
	Meager	7	16-5	9.65	10.00	3.36		
Test of Musical Accom-plishment	Rich	7	120-42	84.50	86.71	2.56	20.70	1.79
	Meager	7	87-33	57.00	66.00	4.07		

*With 12 degrees of freedom, t must be 2.179 to be significant at the .05 level of confidence.

clustering about the mean than would be true if the distribution were a normal one.

The scores of the meager group showed a lower level of performance than those of the rich group as indicated by a range of 42-26, a median of 28.00, a mean of 30.85 and a standard deviation of 3.66. Approximately two of the seven subjects scored between the limits of one sigma above and below the mean which pointed out a bimodal distribution.

On the sense of Loudness, there was a difference of 3.14 between the two means in favor of the meager group. However, with a "t" of .63, this was found to be not significant at the .05 level of confidence.

Scores of the meager group for Loudness indicated a bimodal distribution with approximately two subjects scoring between the limits of one standard deviation on each side of the mean or between 29.52 and 37.04. There were a range of 44-24, a median of 28.50, a mean of 33.28, and a standard deviation of 3.76.

For the rich group, scores on Loudness also showed a bimodal distribution ranging from 42-13 with only one subject scoring between one sigma above and one below the mean or from 26.31 to 34.07. There were a median of 28.00, a mean of 30.14 and a standard deviation of 3.93.

In the sense of Rhythm, the rich group scored higher than the meager with a difference of 1.85 between the means. However, a "t" of 1.06 indicated that the difference was not statistically significant at the .05 level of confidence.

In Rhythm, scores of the rich group showed little dispersion and a high level of performance as revealed by a range of 30-22, a median of 24.40, a mean of 25.85. The standard deviation of 1.68 pointed out that

that only one of the seven subjects scored between one standard deviation above and below the mean representing a bimodal distribution.

On the sense of Rhythm, scores of the meager group revealed little scatter and a relatively high level of performance as indicated by a range of 27-19, a median of 23.40, a mean of 24.00 and a standard deviation of 3.00. Six of the seven subjects scored between 21.00 and 24.00 indicating a large amount of clustering about the mean.

A consideration of Time showed that the rich group scored slightly higher than the meager group with a difference of .14 between the means of the two groups. When tested by the "t" technique, it was found that this difference was not statistically reliable.

For the rich group in the sense of Time, the range of 36-28 indicated that the amount of scatter was small and the level of performance was low. There were a median of 32.40, a mean of 32.49 and a standard deviation of 2.24. There were approximately four of the seven subjects who scored between the limits of one standard deviation on each side of the mean. This approximated a normal curve.

On Time, scores of the meager group revealed a good amount of scatter and a relatively low level of performance as evidenced by a range of 38-28, a median of 31.40, a mean of 32.28 and a standard deviation of 5.68. All of the seven subjects scored between 26.60 and 37.96. This indicated a greater clustering about the mean than would be true if this distribution were a normal one.

The comparison of scores on the sense of Timbre revealed that the rich group scored higher than the meager group with a difference of 1.70 between the two means. However, the "t" of .90 indicated no significance

at the .05 level of confidence.

A consideration of the rich group for the sense of Timbre, revealed that the amount of dispersion in scores was greater than that of the meager group. The range of 40-27, median of 28.50, mean of 30.70 and standard deviation of 3.18 pointed out that four of the seven pupils scored between the two limits of one standard deviation of each side of the mean showing approximately a normal curve.

On the sense of Timbre, scores made by the meager group showed a smaller amount of scatter and a lower level of performance. This was evidenced by a range of 32-24, a median of 30.90, a mean of 29.00 and a standard deviation of 2.48. This distribution approximately represented a normal curve since four of the seven subjects scored between 26.52 and 31.48 or between one sigma below and one sigma above the mean.

A comparison of the scores made by the two groups on the sense of Tonal Memory showed that the rich group scored considerably higher than the meager group with a difference of 8.14 between the means. Even though the "t" was 2.02, this difference was not significant at the .05 level of confidence.

For Tonal Memory, scores of the rich group showed a good amount of dispersion ranging from 30-7. The median of 13.00, mean of 18.14, standard deviation of 2.55 showed that none of the pupils scored between the limits of 15.59 and 20.69. This indicated a bimodal distribution.

On the sense of Tonal Memory, scores of the meager group ranged from 16-5 indicating a very low level of performance with a median of 9.65, a mean of 10.00 and a standard deviation of 3.36. This pointed out that five of the seven subjects scored between one sigma below and one above

the mean, indicating a considerable amount of clustering about the mean.

Data showing the comparison of pupils in the rich musical background and interest group with a random sampling of others in the meager background and interest group on musical accomplishment are shown in Table 5.

In the test of musical accomplishment, the rich group scored much higher than the meager group as revealed by a difference of 20.71 between the means. There was no significance in this difference, however, as pointed out by a "t" of 1.79.

On accomplishment, scores of the rich group showed a great deal of scatter ranging from 120 to 42. The median of 84.50, mean of 86.71 and standard deviation of 2.56 indicated that none of the seven subjects scored between one sigma below and one above the mean which showed a bimodal distribution.

The meager group also scored with a great deal of scatter ranging from 87-33 with a median of 57, a mean of 66, a standard deviation of 4.07. One of the seven subjects scored between the limits on each side of the mean indicating a bimodal distribution.

Summary of Comparison of Scores Made by Subjects with Rich Musical Background and Interests and a Random Sampling of Others with Meager Background and Interests.-- After comparing the performances of the two groups on musical talent and musical accomplishment, the following conclusions were drawn:

1. Subjects in the rich group scored higher than those in the meager group on the sense of Pitch with a difference of 3.01 between the means. The "t" of .90 indicated no significance at the .05 level.

2. There was no significant difference between performances of the

rich group and the meager group on the sense of Loudness. This was shown by a difference of 3.14 between means and a "t" of .63.

3. The rich group scored slightly higher than the meager group on the sense of Time with a difference of only .14 and a "t" of .11 indicating no significance at the .05 level.

4. There was a difference of 1.85 between the means of the two groups on the sense of Rhythm in favor of the rich group but when tested by the "t" technique, no significant difference was found at the .05 level.

5. On the sense of Timbre, the rich group scored higher than the meager group with a difference of 1.70 between means, but the "t" of .90 indicated no significance.

6. The rich group scored considerably higher than the meager group in the sense of Tonal Memory with a difference of 8.14 between the means. However, the "t" of 2.02 revealed no significance at the .05 level of confidence.

7. In accomplishment, the rich group scored considerably higher than the meager group as shown by a difference of 20.71 between means but the "t" of 1.79 indicated that there was no significance at the .05 level of confidence.

CHAPTER III

SUMMARY AND CONCLUSIONS

The summary, conclusions and implications drawn from the data obtained after the administration of the Seashore Measures of Musical Talent, the Kwalwasser-Ruch Test of Musical Accomplishment and a Background and Interest Inventory are presented in this chapter.

Statement of the Problem.-- This study was to determine what implications for improved teaching of music could be derived when musical talent, accomplishment, background and interest of the sixth grade pupils of Edmund Asa Ware Elementary School, Atlanta, Georgia, were analyzed in terms of general status, comparisons and relationships.

Purpose of the Study.-- The purposes of this study were to answer the following questions:

1. What is the general level of musical talent among the sixth grade pupils?

2. What is the general level of musical accomplishment among the sixth grade pupils?

3. What is the general level of musical background and interest among the sixth grade pupils?

4. What is the difference, if any, between the performance of the girls and boys on the Seashore Measures of Musical Talent?

5. What is the difference, if any, between the performance of girls and boys on the Kwalwasser-Ruch Test of Musical Accomplishment?

6. What relationship is there between musical talent and musical accomplishment?

7. How do the musical test scores of those pupils with rich musical background and interest compare with the musical test scores of those with meager musical background and interest who scored above the median for each test?

8. How do the musical test scores of those pupils with rich background and interest compare with a random sampling of those pupils with meager background and interest on each test?

9. What implications for improved teaching of music can be derived from the data?

Definition of Terms.-- Because of confusion in terminology, major terms being used in this study were defined?

Musical Talent refers to the level of capacity as measured by the Measures of Musical Talent by Seashore.

Accomplishment refers to the level of achievement as measured by Kwalwasser-Ruch Test of Musical Accomplishment.

Background refers to environmental conditions favorable to the development of musical talent.

Interest refers to an evidence of preference for music rather than other voluntary activities.

Source of Data.-- The data used in this study were (1) scores made on the six Measures of Musical Talent, namely, Pitch, Loudness, Rhythm, Time, Timbre and Tonal Memory, (2) scores made on the musical accomplishment test and (3) responses given to the musical background and interest inventory.

There were 110 sixth grade pupils used in this study.

Limitations of the Problem.-- Although it is felt that the conditions necessary for obtaining a high degree of objectiveness were met, it is

important that certain limitations be recognized in order to keep the findings in their true perspective.

1. All talent tests isolate and measure, for the most part, the separate elements of musicality or musical mindedness. The underlying idea in all of them is that once the elements are measured and evaluated, the sum of the scores will give a complete picture of the total musical ability, and these elements, in order to be measured at all, must be taken separately and without any relationship to each other. But musicality in the broadest and most desirable connotation of this term, does consist of a relationship of these elements. Consequently, one cannot expect to obtain information which these tests do not give and for which they are not designed. Nevertheless, such tests are extremely valuable to those who wish to know the information which these tests purport to give.

2. Most music accomplishment tests, such as the Kwalwasser-Ruch Test of Musical Accomplishment, include specific musical selections and technical information not possible to identify because of the wide variety of music taught and used in the different school systems. It is thought by a number of music educators, that musical accomplishment tests are not, at their present stage, fully standardized.

3. It is highly probable that the instrument used for the study of background and interest of the subjects was not as valid as the writer desired.

4. Finally, the one hundred and ten sixth grade subjects were drawn from one school for the year, 1953-54, and therefore, could not be representative of sixth grade pupils in other schools in the Atlanta system.

Summary of Related Literature.-- The organization of information

related to the present study fell conveniently into four categories, namely, (1) information concerning musical talent, (2) information concerning musical accomplishment, (3) sex differences in music, and (4) environment and heredity. The literature may be summarized as follows:

1. What is called musical talent is actually a combination of a number of abilities. (Gehrkens, 1936).

2. The ability to judge Pitch is confined to specially trained individuals. (Ricker, 1946).

3. There is Negro superiority in the sense of Time and Rhythm. (Lenoir, 1935).

4. The Eaglesons' found that some persons without musical training made higher averages than some musicians in identifying instruments. (Eagleson and Eagleson, 1947).

5. The Seashore Tests should be applied in all controversial cases. (Wright, 1928).

6. Talented subjects possess better hearing, visual efficiency, higher blood pressure and a higher basic metabolic rate than untalented subjects. (Lehman, 1952).

7. A mind which is active, alert and well trained can accomplish more musically in a short time. (Green, 1947).

8. The standards of the Music Supervisors' Council are beyond the reach of the children. (Kwalwasser, 1942).

9. There is a fixation upon skill, technique, technical terms, technical symbols, and an ignoring of the widest possible variety of significant and appealing musical experiences and activities. (Mursell, 1951).

10. Faulty performance is due in a very large part to sluggish or

inadequately critical control of the ear. (Seashore, 1919).

11. The social stereotype that women are more artistic than men is supported by musical tests. (Gilbert, 1942).

12. Scheinfield is still looking for a great woman composer. (Scheinfield, 1950).

13. Elementary girls rate higher than boys because of the prevailing trait of aloofness on the part of the boys. (Smith, 1914).

14. Great achievement is correlated with an early start. (Scheinfield, 1950).

15. Musical talent is probably inherited through a number of genes. (Scheinfield, 1950).

16. It is the task of the school to surround the child with an environment which draws out his creative powers. (Rugg, 1928).

Steps in the Procedure.-- The specific steps used in making this study as related to the purposes were:

1. The 110 raw scores made on each of the six measures of musical talent were tabulated, placed in frequency distribution tables and the ranges, median, means, standard deviations and percentiles were calculated in order to determine the general level of musical talent.

2. The 110 raw scores made on the Kwalwasser-Ruch Test of Musical Accomplishment were tabulated, placed in a frequency distribution table and the range, median, mean, standard deviation and percentile rank were calculated in order to determine the general level of musical accomplishment.

3. An inventory was designed to secure the information needed to determine the general level of musical background and interest of the

110 subjects. The responses were studied and totaled. The pupuls were divided into two groups, (1) those whose background and interest were highly favorable of musical development and (2) those whose background and interest were almost deadening for musical expression.

4. The raw scores of the 53 girls on each of the six measures of musical talent were tabulated, placed in frequency distribution tables and the ranges, medians, means, standard deviations were calculated so that comparisons could be made later with scores made by the boys.

5. The raw scores of the 57 boys on each of the six measures of musical talent were tabulated, placed in frequency distribution tables and the ranges, medians, means, and standard deviations were calculated. The standard error of the difference between means and a "t" test of significance were used in order to determine the difference, if any, between the performance of girls and boys on musical talent.

6. The raw scores of the 53 girls on musical accomplishment were tabulated, placed in a frequency distribution table and the ranges, median, mean, standard deviation were calculated.

7. The raw scores of the 57 boys on musical accomplishment were tabulated, placed in a frequency distribution table and the range, median, mean, standard deviation were calculated. The standard error of the difference between means of boys and girls and a "t" test of significance were found in order to determine the difference, if any, between the performance of girls and boys on musical accomplishment.

8. The scores made on musical talent and musical accomplishment were placed in a scatter diagram for computing Pearson's Product-Moment coefficient of correlation in order to determine the relationship between these

two variables.

9. The scores of those seven pupils with rich musical background and interest and others with meager background and interest who scored above the median on tests of musical talent and accomplishment were tabulated, placed in frequenoy distribution tables and the ranges, medians, means, standard deviations, standard error of difference between means and a "t" test of significance were computed in order to compare performances of the two groups on each test.

10. The scores of those seven pupils with rich musical background and interest and scores of a random sampling of seven others with meager background and interest on test of musical talent and accomplishment were tabulated, placed in frequency distribution tables and the ranges, medians, means, standard deviations, standard error of difference between means and a "t" test of significance were found in order to oompare performances of the two groups on each test.

11. The data were presented in tabular form, analyzed and interpreted.

12. Findings were summarized and conolusions were extracted from the findings.

13. Implications were drawn from the conclusions.

Findings.-- Statistioally, the findings were expressed as follows:

1. The general level of musioal talent was low, with peroentiles equivalent to the median ranging from ten to forty in the sense of Pitch, Loudness, Time, Timbre, and Tonal Memory. The group scored highest in the sense of Rhythm with a percentile rank of eighty.

2. Evidence showed that the group scored very low in accomplishment, with a mean of 44.77 and a percentile rank of 26.

3. The general level of background and interest was poor, with only seven pupils considered in the rich group and one-hundred and three in the meager group.

4. A comparison of the performances of the girls on musical talent, showed that, in the sense of Pitch, the difference between means of the two groups was 5.22 in favor of the girls. This was found to be highly significant at the .05 level of confidence. The slight difference of .54 between means with a "t" of .41 indicated no significant difference between the two groups in the sense of Loudness. There was a difference of 1.24 between the means in favor of the girls in the sense of Rhythm but the "t" of 1.36 revealed that this difference was not significant. There was no significant difference between performance of boys and girls on the sense of Time. The difference between the means was .08 with a small "t" of .07. The girls scored higher than the boys in the sense of Timbre. This was pointed out by a difference of .32 between the two means but the "t" of .33 indicated no significance. The difference between the two means in the sense of Tonal Memory was 2.08 in favor of the girls. The "t" of 1.72 revealed that this difference was not a significant one.

5. The comparison between boys and girls on the musical accomplishment test showed that the girls scored higher than the boys with a difference of 5.50 between the means. The "t" of 1.41 indicated that this was not significant at the .05 level of confidence.

6. The relationship between accomplishment and some of the measures of musical talent were as follows: (1) Loudness, r = .355 (2) Rhythm, r = .233, (3) Time, r = -.826 (4) Timbre, r = .273 and (5) Tonal Memory, r = .374. With 108 degrees of freedom, "t" is .195, therefore, these r's were found

to be statistioally reliable. The r between accomplishment and the sense of Pitch was .101 indicating no relationship.

7. A comparison of those pupils with rich musical background and interest and others with meager background and interest who scored above the median on tests of talent and accomplishment, revealed that there was a difference of 5.81 in favor of the meager group in the sense of Pitch. The "t" of 2.43 indicated that this was significant. The meager group scored higher than the rich group in the sense of Loudness, with a difference of 9.86 between the means of a "t" of 4.13, indicating that this was highly significant. There was only a difference of .15 between means in favor of the meager group in the sense of Rhythm. The "t" of .22 pointed out no significance. There was a difference of 5.27 between means in the sense of Time in favor of the meager group. High significance was indicated by a "t" of 5.32. The meager group scored higher than the rich group on the sense of Timbre, with a difference of 6.48 between the means, revealing a significant "t" of 4.72. The meager group again scored significantly higher than the rich group in Tonal Memory as pointed out by a difference of 6.55 between means and a "t" of 2.27.

A comparison of the two groups on musical acoomplishment revealed that the "t" of 1.91 indicated no significance in the difference of 16.49 between means which was in favor of the meager group.

8. The oomparison of pupils with rich musical background and interest and the random sampling of others with meager background and interest on tests of musical talent and accomplishment revealed that, for the sense of Pitch, the difference of 3.01 between means favored the rich group. The "t" of .90 indicated that this difference was not significant. The meager

group scored 3.14 points higher than the rich group on the sense of Loudness, but the "t" of .63 showed no significance of difference. No statistical reliability was indicated by a difference between means of 1.85 and a "t" of 1.06 for the sense of Rhythm. The rich group scored slightly higher than the meager group on the sense of Time, but the difference of .14 between means was not significant as pointed out by a "t" of .11. There was no statistical difference in performance of the two groups on the sense of Timbre even though the rich group scored higher than the meager group. This was pointed out by a difference of 1.70 between means and the "t" of .90. The difference of 8.14 in favor of the rich group and "t" of 2.02 showed no reliability in difference between means for the sense of Tonal Memory.

The rich group scored considerably higher than the meager group in musical accomplishment as shown by a difference of 20.71 between the two means. However, the "t" of 1.79 indicated no significant difference between the two groups.

Summary of Findings.--- Generally, the findings were summarized as follows:

1. The level of musical talent in the subjects studied was low average except in the sense of Rhythm.

2. The level of accomplishment was very poor.

3. There was no significant difference between the performance of boys and girls in accomplishment. There was only one trait in musical talent in which one sex excelled. That was in the sense of Pitch which favored the girls.

4. There was a statistically reliable relationship between musical

accomplishment and talent in the sense of Loudness, Rhythm, Timbre, and Tonal Memory.

5. There was no significant difference in performance of pupils with rich musical background and interest and others with meager background and interest who scored above the median in accomplishment. In talent, a superiority of the meager group over the rich group was indicated for the sense of Pitch, Loudness, Time, Timbre and Tonal Memory.

6. There was no significant difference between pupils with rich musical background and interest and the random sampling of others with meager background and interest on any of the measures of musical talent nor in musical accomplishment.

7. The general level of background and interest was very low.

Conclusions.-- The following conclusions were drawn directly from the interpretation of the data collected in this study:

1. As a total group, the subjects seemed to have greater aptitudes and potentialities for the sense of Rhythm than for any of the other talents of music studied.

2. The generally low level of music accomplishment suggested the possibility that the subjects' limited musical talents failed to motivate and/or prevented appreciable achievement in fundamentals of music, such as time signatures, key signatures, note values, rest values and the like.

3. Except for the girls' superiority in the sense of Pitch, there was no justification for expecting the respective groups of boys and girls to excel each other in the areas of musical talent and accomplishment measured.

4. The reliable positive relationship between musical accomplishment and talents of Loudness, Rhythm, Timbre and Tonal Memory indicated that

pupils possessing the latter talents might be expected to make more achievement in musical symbols, note values, rest values, time signatures, and the like than those with less talent.

5. Since the factors considered constitutive of rich musical background did not appear to contribute significantly to a high level of performance in music, it was concluded that: (1) factors other than those of this study might be operative in instances of high levels of performances, or (2) the environmental conditions favorable to development of musical talent had not been sufficiently utilized.

6. In the light of the concept of interest as used in this study, the pupils gave evidence of predominately preferring activities other than music.

Implications.-- The following implications were drawn on the basis of the findings and conclusions in this study:

1. The low level of accomplishment suggests that perhaps these children would benefit from a change in the method of teaching the fundamentals of music.

2. The affirmative responses on the inventory concerning Rhythm classes suggests that the school is providing opportunities for expression in the sense of talent that rated highest in this study.

3. The low level of background and interest suggests that parents and teachers are not providing enough opportunities for developing an appreciation for this art.

Recommendations for the Musical Program.-- The data in this study suggests the following needs for the subjects involved:

1. The teaching of the fundamentals of music should be changed from

a formal, isolated procedure, based on mechanical drill, to one that provides rich experiences, thus promoting desires for expression in this art.

2. The Rhythm program of the school should be extended by providing instruction in all types of percussion instruments.

3. Parents and teachers should be encouraged to capitalize on factors in the background of pupils which may be used to advantage in raising the levles of musical accomplishment among pupils.

4. Cooperative efforts to raise the level of preference for musical activities should be reinforced through a study of present offerings in music and an exploration of possibilities for extending them.

Recommendations for Further Study.-- As a result of this study, the following suggestions were made for further studies in music education:

1. A study of teacher attitudes toward the teaching of classroom music.

2. A study to determine if the basis used for grading in music takes into consideration the capabilities of children.

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APPENDIX A

FORMULAS USED IN THIS STUDY

Formulas Used in This Study

1. Median

$$Mdn = L + \left(\frac{\frac{N}{2} - Fb}{Fp}\right) ci$$

2. Mean

$$M = GM + C$$
$$C = \frac{\varepsilon FX}{N} \times ci$$
$$\therefore M = GM + \frac{\varepsilon FX}{N} \times ci$$

$$M = \frac{\varepsilon X}{N}$$

3. Standard Deviation

$$\sigma = ci \times \sqrt{\left(\frac{\varepsilon FX_1^2}{N}\right) - \left(\frac{\varepsilon FX_2}{\quad}\right)^2}$$

4. Standard Error of a Difference Between Means

$$\sigma dm = \sqrt{\left(\frac{\sigma X_1}{\sqrt{N-1}}\right) + \left(\frac{\sigma X_2}{\sqrt{N-1}}\right)}$$

5. A "t" Ratio for the Difference Between Means

$$t = \frac{M_1 - M_2}{\sigma dm}$$

6. Fisher's "t" Formula for Testing the Difference Between Means

$$t = \sqrt{\left[\frac{\varepsilon x_1^2 + \varepsilon x_2^2}{N_1 + N_2 - 2}\right]\left[\frac{N_1 + N_2}{N_1 N_2}\right]}$$

$$\frac{M_1 - M_2}{\quad}$$

7. Pearson's Product-Moment Coefficient of Correlation

$$r_{xy} = \frac{\frac{\varepsilon x'y'}{N} - (c'_x c'_y}{(\sigma x')(\sigma' y)}$$

APPENDIX B

MUSICAL BACKGROUND AND INTEREST INVENTORY

MUSICAL BACKGROUND AND INTEREST INVENTORY

Name _____ Date _____

Age last birthday _____ Years birthday _____
Month and Day

Grade _____ Teacher _____

School _____ City _____

Most of you enjoy music of some kind. You have shown that by the way you take part in your music classes here at school. I am interested in finding out what kinds of music you like. Maybe I can make your music classes more enjoyable. You can help me get this information by answering the following questions.

Read each question carefully. Some may be answered with a check. ( ) Others are to be answered as directed. If there is a question that you do not understand, I will be happy to explain it to you.

1. Do you play a music instrument?

   Yes No

2. How long do you practice daily?

   1 hour 30 minutes 5 minutes not at all

3. Do you sing?

   Yes No

4. Do you play in a band or orchestra?

   Yes No

5. In what band or orchestra do you play?

6. Are you a member of a singing group?

   Yes No

7. Check the organization to which you belong.

   School chorus Church choir Boys chorus

8. Do you listen to music at home?

   Yes No

9. Are there any musical instruments in your home?

Yes No

10. Check the instruments in your home.

Radio	Saxaphone	Violin	Others
Piano	Television	Trumpet	
Organ	Record Player	Drums	
Cornet	Clarinet	Viola	

11. If you have a record player at home, how often are records played?

Daily Weekly Not often

12. Who selects the records that are played at your home?

Mother Father Other Relatives You

13. Check the places where you enjoy music very much.

Home Church Sunday School School Movies Concerts

14. Have you ever taken music lessons?

Yes No

15. Check the kind of lessons you have taken. Put a circle around the kind you are taking now.

Piano	Cornet	Trumpet	Oboe
Violin	Clarinet	Drums	Trombone
Cello	Accordian	Voice	Saxaphone

16. Does your mother play an instrument?

Yes No

17. Does your mother sing around the house?

Yes No

18. Does your mother sing well?

Yes No

19. Does your mother sing on programs?

Yes No

20. Does your father play an instrument?

Yes No

21. Does your father sing around the house?

Yes No

22. Does your father sing well?

Yes No

23. Does your father sing on programs?

Yes No

24. Check the activities of your father with an "F".

Plays Piano Plays in band Sings in choir

Sings Plays in orchestra Sings in other organizations

25. Check the activities of your mother with an "M".

Plays Piano Plays in band Sings in choir

Sings Plays in orchestra Sings in other organizations

26. Do you like to hear music?

Yes No

27. Do you enjoy playing a musical instrument?

Yes No

28. If you do not play an instrument now, would you like to learn to play one?

Yes No

29. What instrument would you like to learn to play? _____

30. Do your parents want you to learn to play an instrument?

Yes No

31. Do you sing to yourself when you are working or playing?

32. Check the kinds of music you enjoy:

Symphony Sacred Hillbilly

Opera Swing Blues

Band Cowboy

33. Make a list of your favorite songs:

34. List the programs you enjoy hearing on the radio:

35. List the programs you enjoy watching on television:

36. Do you enjoy the rhythm classes in the auditorium?

APPENDIX C

SUMMARY OF MUSICAL BACKGROUND AND INTEREST INVENTORY

SUMMARY
OF
MUSICAL BACKGROUND AND INTEREST INVENTORY

	Question	Yes	No
1.	Do you play a music instrument?	17	93
2.	How long do you practice daily?		
	1 hour	4	
	30 minutes	3	
	5 minutes	9	
	3 times a week	1	
3.	Do you sing?	86	34
4.	Do you play in a band or orchestra?	3	107
5.	In what band or orchestra do you play?		
	Lodge bands	3	
6.	Are you a member of a singing group?	43	67
7.	Check the organization to which you belong.		
	Church choir	16	
	Boys chorus	27	
8.	Do you listen to music at home?	105	5
9.	Are there any musical instruments in your home?	42	68
10.	Check the instruments in your home.		
	Radio	83	
	Piano	13	
	Saxaphone	2	
	Television	71	
	Record player	51	
	Clarinet	3	

Question		Yes	No
	Violin	1	
	Trumpet	2	
	Drums	2	
	Harmonica	1	
	Harp	1	
	Guitar	1	
	Banjo	1	
	Flute	2	
11.	How often are records played at your home?		
	Daily	8	
	Weekly	14	
	Not often	29	
12.	Who selects the records played at your home?		
	Mother	12	
	Father	8	
	You	5	
13.	Check the places you enjoy music very much.		
	Home	110	
	Church	110	
	Sunday School	110	
	School	110	
	Movies	110	
	Concerts	84	
14.	Have you ever taken music lessons?	17	93
15.	Check the kinds of lessons you have taken.		
	Piano	16	

	Question	Yes	No
	Clarinet	1	
16.	Does your mother play an instrument?	13	97
17.	Does your mother sing around the house?	61	49
18.	Does your mother sing well?	33	77
19.	Does your mother sing on programs?	6	104
20.	Does your father play an instrument?	8	102
21.	Does your father sing around the house?	31	70
22.	Does your father sing well?	15	95
23.	Does your father sing on programs?	7	103
24.	Check the activities of your father with an "F".		
	Plays piano	2	
	Sings in choir	17	
	Plays in orchestra	2	
25.	Check the activities of your mother with an "M".		
	Plays piano	13	
	Sings	49	
	Sings in choir	49	
26.	Do you like to hear music?	110	
27.	Do you enjoy playing a musical instrument?	17	
28.	If you do not play an instrument, would you like to?	91	
29.	What instrument would you like to play?		
	Piano	78	
	Saxaphone	4	
	Violin	5	
	Clarinet	1	
	Drums	3	

Question	Yes	No
30. Do you sing to yourself when you are working or playing?	63	47
31. Do your parents want you to learn to play an instrument?	84	
Don't know	9	
32. Check the kinds of music you enjoy.		
Symphony	23	
Band	54	
Sacred	73	
Opera	5	
Swing	91	
Blues	94	
33. Make a list of your favorite songs.		
I Believe	27	
Oh, My Pa Pa	83	
Rags to Riches	64	
Stranger in Paradise	60	
Jesus Met the Woman at the Well	33	
Crying in the Chapel	91	
Shake a Hand	90	
Changing Partners	74	
Money Honey	69	
Dragnet	54	
Pretend	17	
Ebbtide	19	
I Let the Landlord Ring	9	

Question	Yes	No
34. List the Program you enjoy hearing on the radio.		
Blues in the Night	83	
Piano Red	3	
Digging the Disc	48	
Gospel Train	63	
Dragnet	15	
Pat's Alley	31	
35. List your favorite television programs.		
I Married Joan	17	
My Little Margie	74	
Dragnet	90	
Your Hit Parade	78	
I Love Lucy	71	
Suspense	63	
Arm Chair Playhouse	23	
The Lone Ranger	87	
36. Do you enjoy the rhythm classes in the Auditorium	104	5
Sometimes	1	

APPENDIX D

KWALWASSER-RUCH TEST OF MUSICAL ACCOMPLISHMENT

NAME _____ DATE _____ HOUR _____

SCHOOL: _____ CITY _____ GRADE _____ AGE _____

PITCH

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

LOUDNESS

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

RHYTHM

	A	B	C
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

REMARKS:

THE PSYCHOLOGICAL CORPORATION, NEW YORK 18, N.Y.

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TIME

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

TIMBRE

	A	B	C	D	E
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

TONAL MEMORY

	A	B	C
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

KWALWASSER-RUCH TEST OF MUSICAL ACCOMPLISHMENT

For Grades IV-XII

By JACOB KWALWASSER, Ph. D.
Professor of Music Education
Syracuse University, Syracuse, N.Y.

And G. M. RUCH, PH. D.
Professor of Education
University of California, Berkeley

Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, birthday, etc. Write plainly.

Name..... Date .....
(First name, initial and last name)

Age last birthday.....years. Birthday.....
(Month and day)

Grade.....Teacher.....

School.....City .....

How many years have you studied music in school?.....

How long have you studied music outside of school?.....
(state your answer in half-hour lessons)

Do not write below this line.

TEST	NAME OF TEST	SCORE
1	Knowledge of Musical Symbols and Terms	
2	Recognition of Syllable Names	
3	Detection of Pitch Errors in a Familiar Melody	
4	Detection of Time Errors in a Familiar Melody	
5	Recognition of Pitch Names	
6	Knowledge of Time Signatures	
7	Knowledge of Key Signatures	
8	Knowledge of Note Values	
9	Knowledge of Rest Values	
10	Recognition of Familiar Melodies from Notation	
TOTAL		

Do Not Turn Over The Page Until The Signal is Given!

Published by the Extension Division, University of Iowa, Iowa City, Iowa.

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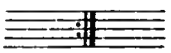
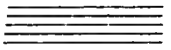
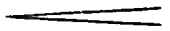
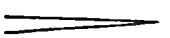
Test 1. Knowledge of Musical Symbols and Terms

Directions: Below are twenty-five questions about music. Five answers are given to each question. Read each question and then draw a line under the right answer. The sample is already marked as it should be.

Sample:  is called a **sharp** **natural** **flat** **note** **rest**

Begin here.

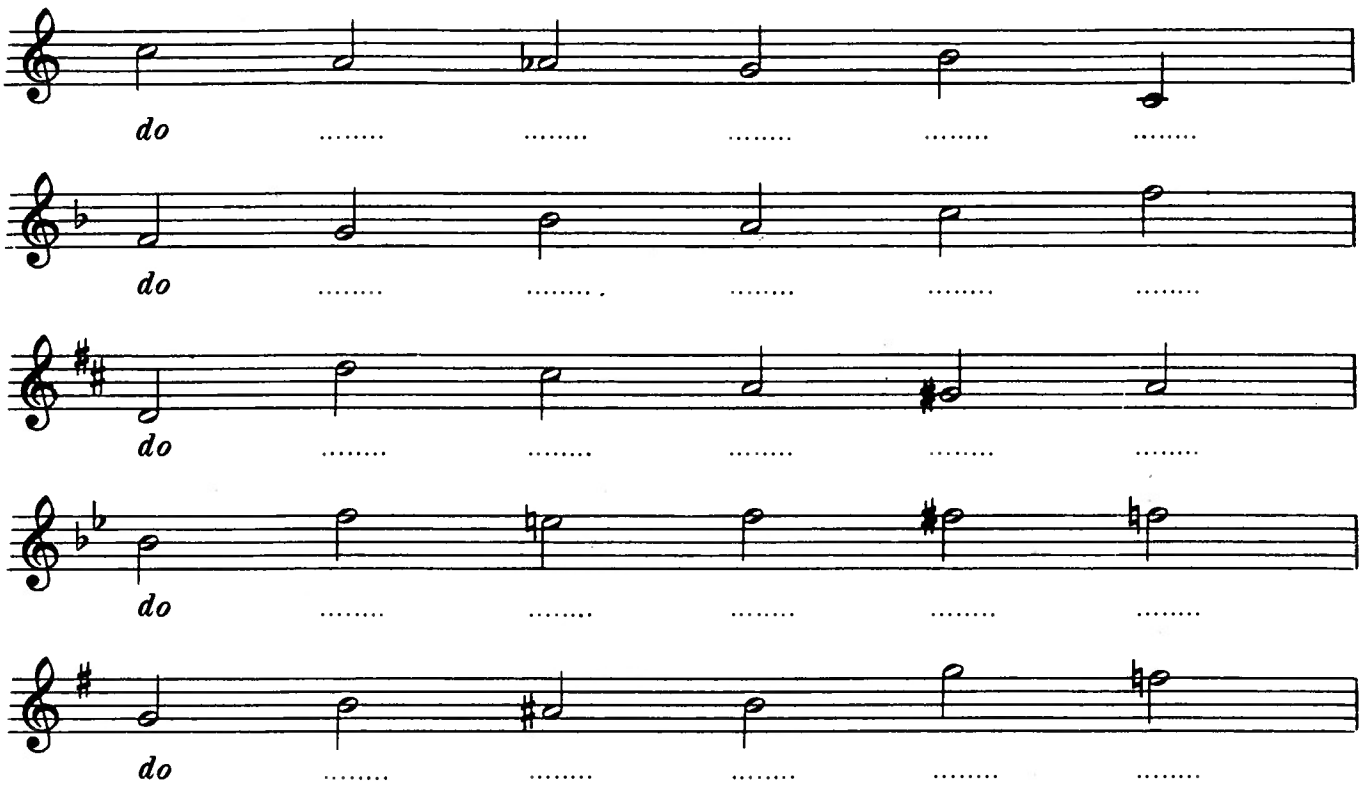
1	The first tone of the scale is	**mi** **re** **do** **fa** **sol**	1
2		is called a **rest** **natural** **sharp** **note** **flat**	2
3	The fifth tone of a scale is	**do** **fa** **mi** **sol** **re**	3
4		is a **flat** **note** **natural** **rest** **sharp**	4
5		is a **sharp** **flat** **natural** **note** **rest**	5
6		is a **slur** **hold** **rest** **double-sharp** **repeat-bar**	6
7		is called a **sharp** **flat** **natural** **note** **rest**	7
8	*p*	means **soft** **loud** **slow** **fast** **smooth**	8
9		is called a **bar** **staff** **measure** **accent** **clef**	9
10		is a **sharp** **flat** **natural** **note** **rest**	10
11		is a **clef** **staff** **measure** **accent** **phrase**	11
12		is called a **clef** **staff** **measure** **accent** **bar**	12
13		is a **clef** **measure** **staff** **phrase** **accent**	13
14		the curved line is a **slur** **tie** **hold** **accent** **rest**	14
15		is a **rest** **slur** **hold** **double-sharp** **repeat**	15
16		the curved line is a **slur** **hold** **rest** **tie** **accent**	16
17		means **higher** **lower** **louder** **repeat** **pause**	17
18		means **higher** **lower** **louder** **softer** **pause**	18
19	*Allegro*	means **lively** **slow** **repeat** **accent** **sweetly**	19
20	*f*	means **fast** **loud** **slow** **soft** **smooth**	20
21	*cresc.*	means **softer** **louder** **slower** **faster** **smooth**	21
22	*dim.*	means **smoother** **louder** **softer** **faster** **slower**	22
23	*Lento*	means **repeat** **accent** **sweetly** **slow** **lively**	23
24	*Legato*	means **soft** **quick** **separated** **connected** **loud**	24
25	*Staccato*	means **quick** **soft** **separated** **connected** **loud**	25

Test 1. Number right=Score.....

TEST 2. RECOGNITION OF SYLLABLE NAMES

DIRECTIONS: Below are five lines of notes. The first syllable in each line is "Do"; so the name do has been written below it. You are to write the syllable names on the lines under the other notes.

Begin here.

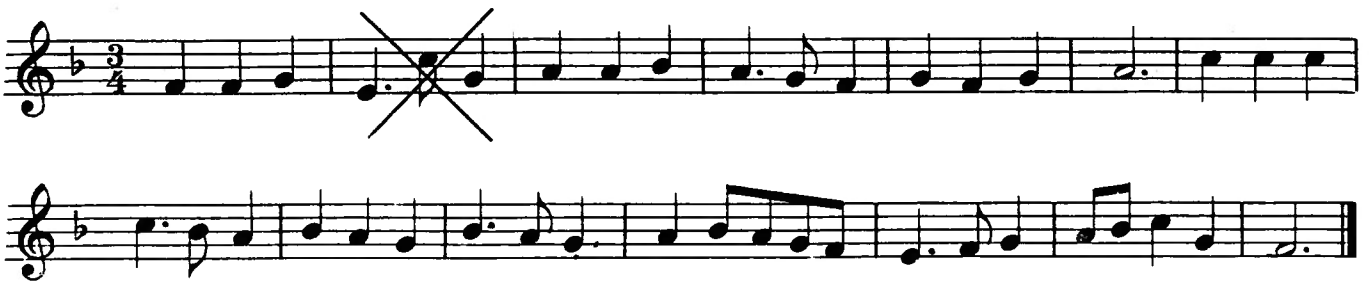


Test 2. Number right = Score.....

TEST 3. DETECTION OF PITCH ERRORS IN A FAMILIAR MELODY

DIRECTIONS: The song "America" is written below. One measure has been crossed out because the melody is wrong. Five other measures are wrong. Hum over the melody to yourself and cross out all five wrong measures.

Begin here:

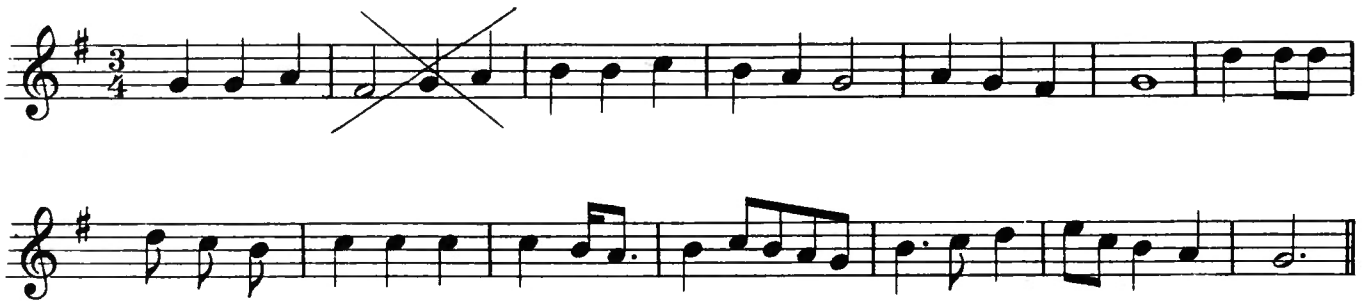


Test 3. Number right.....×5 = Score.....

TEST 4. RECOGNITION OF TIME ERRORS IN A FAMILIAR MELODY.

DIRECTIONS: The song "America" is written below. One of the measures has been crossed out because it has the wrong number of beats. Five other measures are wrong. Hum over the song and cross out all five wrong measures.

Begin here:

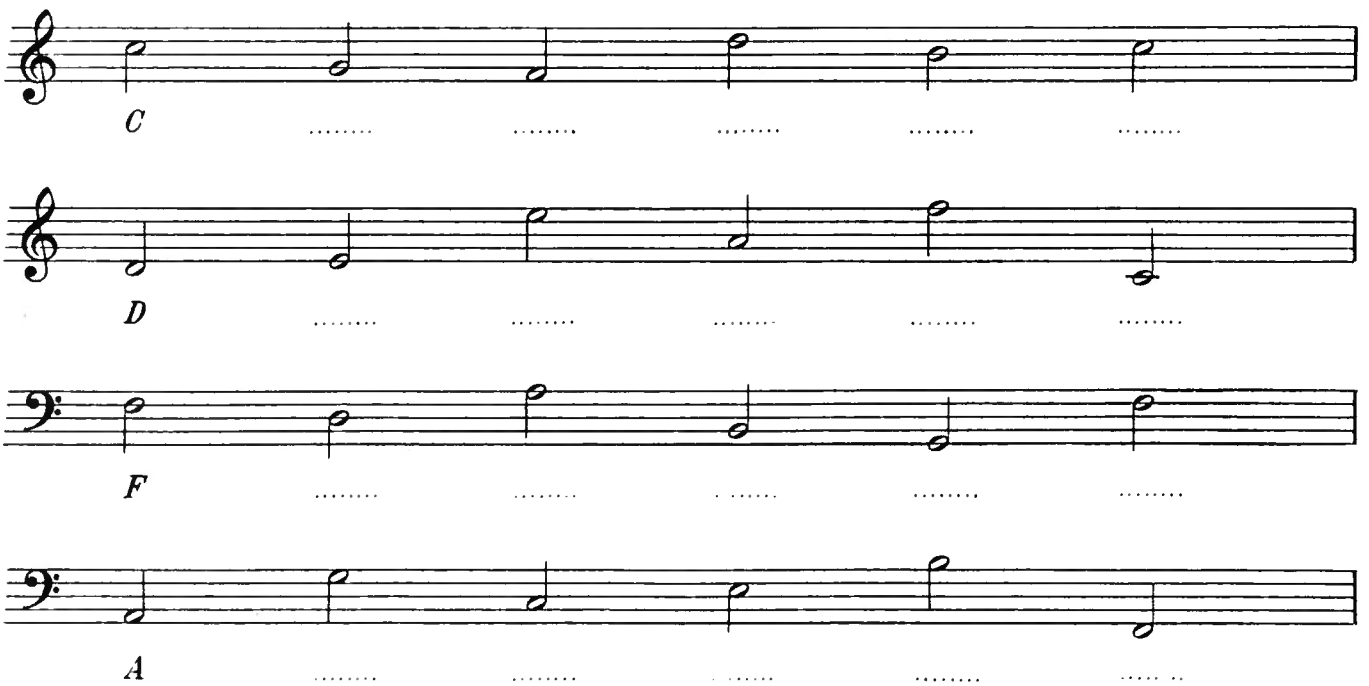


Test 4. Number right....×3 =Score.....

TEST 5. RECOGNITION OF PITCH NAMES.

DIRECTIONS: Below are four lines of notes. The first note in each line is already marked as it should be. You are to write the pitch or letter names on the lines under the other notes.

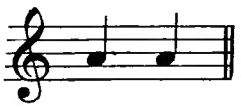
Begin here:



Test 5. Number right = Score .....

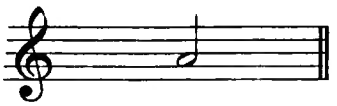
TEST 6. KNOWLEDGE OF TIME SIGNATURES

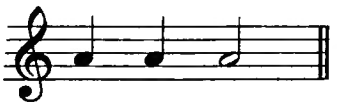
DIRECTIONS: Below are ten full measures. At the right of each are five time signatures. You are to draw a line under the correct time signature for each measure. The sample is marked as it should be.

SAMPLE.  The time signature is $\underline{\frac{2}{4}}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{6}{8}$ $\frac{3}{8}$

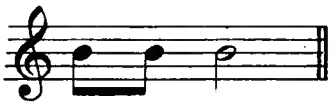
Begin here:

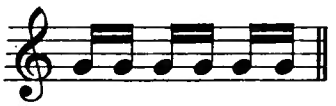
1  The time signature is $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{3}{8}$ $\frac{9}{8}$ 1

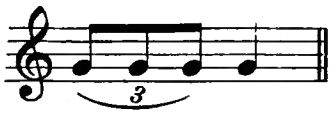
2  The time signature is $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ $\frac{6}{8}$ $\frac{9}{8}$ 2

3  The time signature is $\frac{3}{4}$ $\frac{4}{4}$ $\frac{6}{8}$ $\frac{9}{8}$ $\frac{3}{8}$ 3

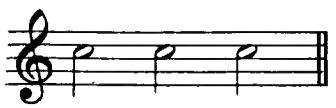
4  The time signature is $\frac{6}{8}$ $\frac{4}{4}$ $\frac{5}{4}$ $\frac{3}{8}$ $\frac{2}{4}$ 4

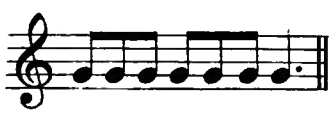
5  The time signature is $\frac{2}{4}$ $\frac{5}{4}$ $\frac{4}{4}$ $\frac{3}{8}$ $\frac{3}{4}$ 5

6  The time signature is $\frac{3}{8}$ $\frac{2}{4}$ $\frac{4}{4}$ $\frac{3}{4}$ $\frac{6}{8}$ 6

7  The time signature is $\frac{5}{4}$ $\frac{4}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{6}{8}$ 7

8  The time signature is $\frac{3}{8}$ $\frac{9}{8}$ $\frac{2}{4}$ $\frac{6}{8}$ $\frac{4}{4}$ 8

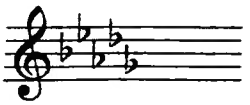
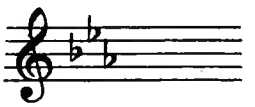
9  The time signature is $\frac{2}{4}$ $\frac{3}{2}$ $\frac{4}{4}$ $\frac{6}{8}$ $\frac{3}{8}$ 9

10  The time signature is $\frac{2}{4}$ $\frac{6}{8}$ $\frac{9}{8}$ $\frac{3}{4}$ $\frac{4}{4}$ 10

Test 6. Number right.....×2 = *Score*.....

TEST 7. KNOWLEDGE OF KEY SIGNATURES

DIRECTIONS: At the left below is a column of ten major key signatures. At the right is a column of five minor key signatures. You are to write the names of the keys on the lines at the right of each signature.
Notice that there are two columns, one for major keys and one for minor.

SAMPLES:  D flat  C minor

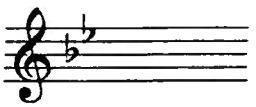
---

Begin here.

MAJOR KEY SIGNATURES

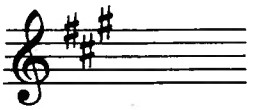
1  1

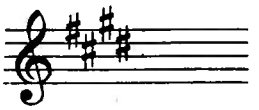
2  2

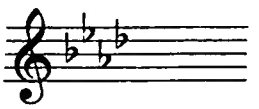
3  3

4  4

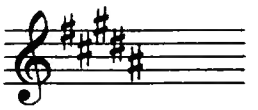
5  5

6  6

7  7

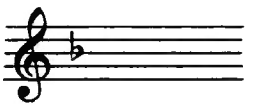
8  8

9  9

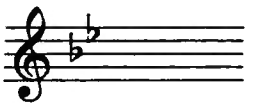
10  10

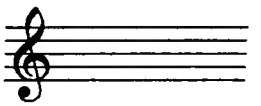
MINOR KEY SIGNATURES

11  11

12  12

13  13

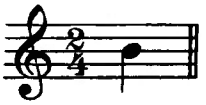
14  14

15  15

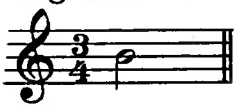
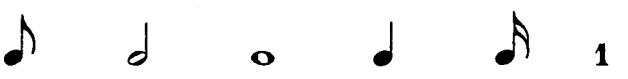
Test 7. Number right.....×2 = *Score*.....

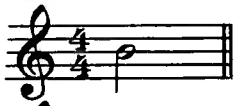
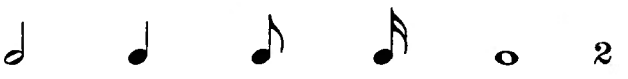
TEST 8. KNOWLEDGE OF NOTE VALUES

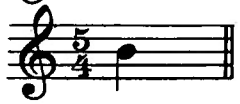
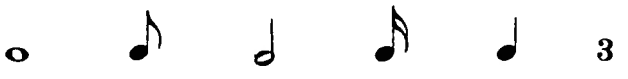
DIRECTIONS: In the measures below a note has been left out of each. You are to draw a line under the note needed to complete the measure. The sample is already marked as it should be.

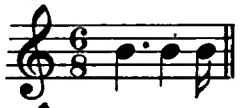
SAMPLE:  The note needed is 

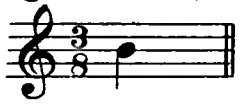
Begin here.

1  The note needed is  1

2  The note needed is  2

3  The note needed is  3

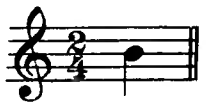
4  The note needed is  4

5  The note needed is  5

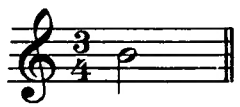
Test 8 Number right.....×3= *Score*.....

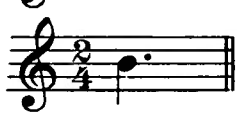
TEST 9. KNOWLEDGE OF REST VALUES

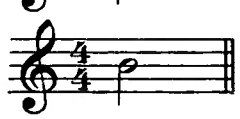
DIRECTIONS: The five measures below are incomplete and need a rest to complete them. You are to draw a line under the rest needed to complete the measure. The sample is already marked as it should be.

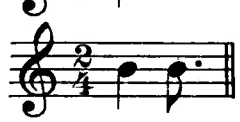
SAMPLE:  The rest needed is 

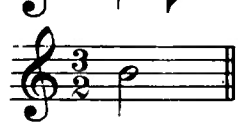
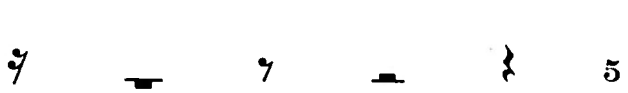
Begin here.

1  The rest needed is  1

2  The rest needed is  2

3  The rest needed is  3

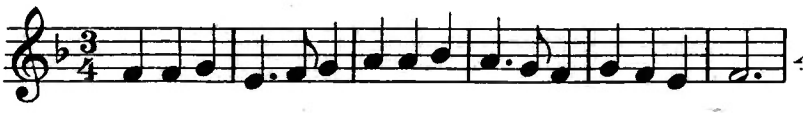
4  The rest needed is  4

5  The rest needed is  5

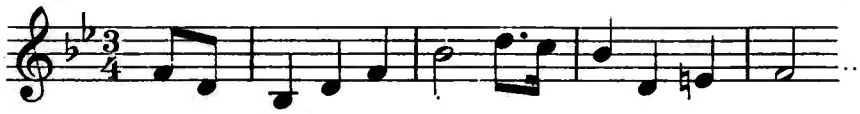
Test 9 Number right.....×3= *Score*.....

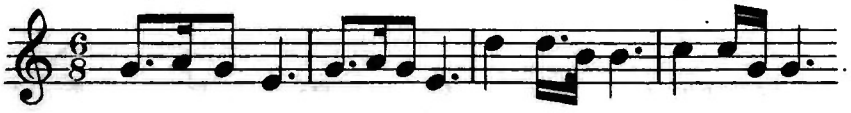
TEST 10. RECOGNITION OF FAMILIAR MELODIES FROM NOTATION

DIRECTIONS: Below are phrases from ten songs that you know. Hum each line to yourself and then write the name of the song or the words of the phrase on the line at the right.
The sample is already marked as it should be.

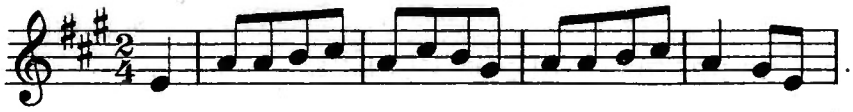
SAMPLE.  *America or My Country 'tis of Thee*

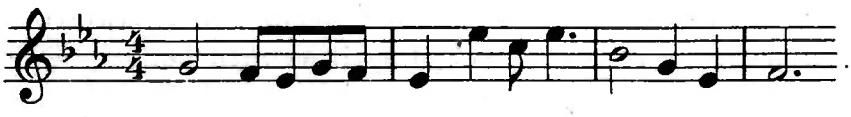
Begin here.

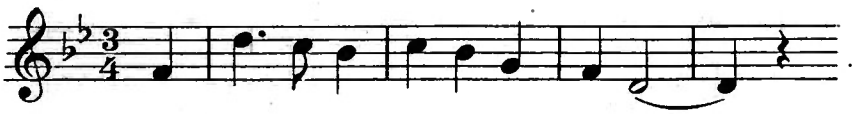
1  1

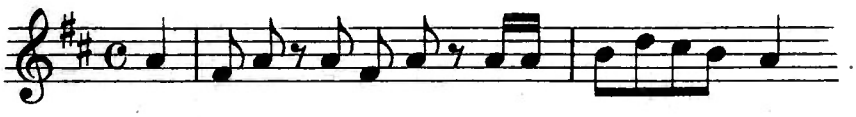
2  2

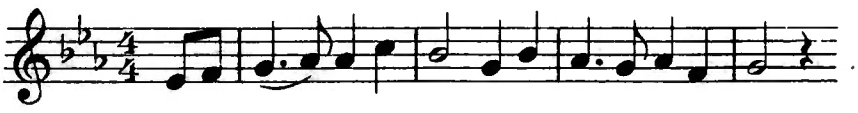
3  3

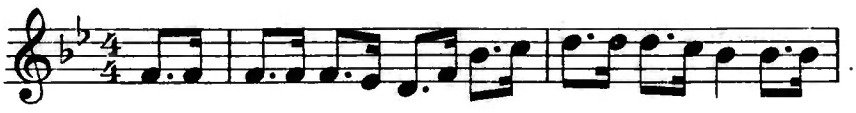
4  4

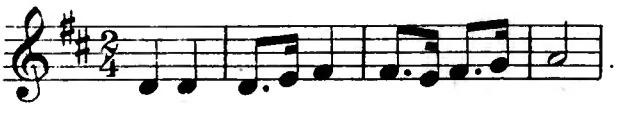
5  5

6  6

7  7

8  8

9  9

10  10

4

Test 10 Number right.....X5 Soore.....

14